Edward Burton's ms notes on the lectures on anatomy and surgery given at St. George's Hospital (London) by Everard Home. Vol. 1

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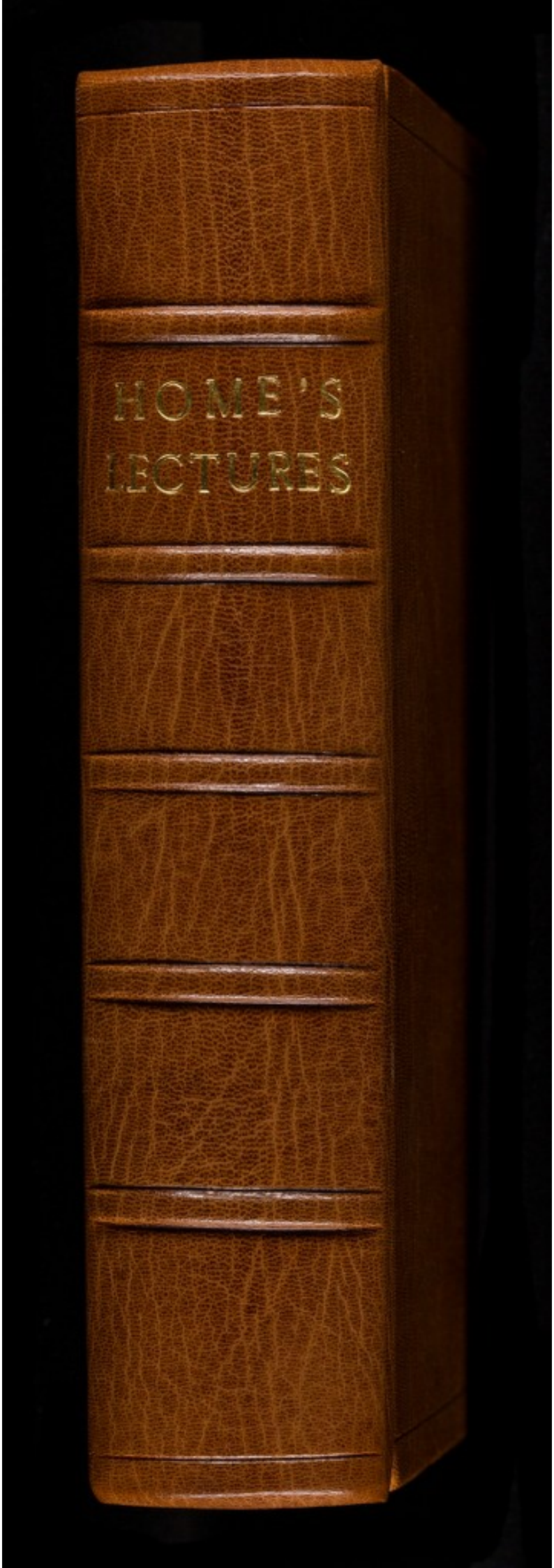
HOME'S
LECTURES


HOME'S
LECTURES

Notes of the Lectures,

given at St. George's Hospital,

by

Everard Home Es.qr

taken in

1807

by

Edward Burton.

Index.

Lecture the 1.st

Introductory.

It has been usual in a Course of Lectures on any branch of Philosophy or Science, to give what is termed an Introductory Lecture. In this Lecture a short history of the rise and progress of the subject is generally given, its excellencies pointed out, and the best mode of improvement suggested in it, explained.

It is scarcely necessary to say anything here concerning the utility of the

Profession of Surgery. To possess the power of relieving misery, and softening the anguish of the distressed, points out its own utility; and bad must that Man be, who thinks the value of such a profession slight.

As these Lectures are intended for those who have made some progress in the study of Surgery, it is not here necessary to enter into a minute History of it. Suffice it to say, that in the earlier ages Surgery was at a very low ebb. It for the most part consisted merely of manual Operations, and

there were under the direction of Physi-
cians, who, being ignorant of the Structure
and functions of the Human body, were
totally incapable of that Office. Surgery
is so intimately connected with Anatomy,
that the progress of the one can always
keep pace with the progress of the o-
ther. Little or nothing was known of Ana-
tomy till it was first attended to by
Hippocrates. From that time it has been
studied by individuals in almost every
Country; but the natural antipathy
to and prejudice against dead bodies,
rendered it necessary to follow the Study

of it as secret. In France this seems quite to have been got over; and public schools for the teaching of Anatomy were established there at the beginning of the last Century, which were resorted to by students from all parts of Europe; no one being thought properly educated, who had not studied at Paris. In England, before the time of the celebrated Dr. Hunter, Anatomy was superficially taught, or altogether unknown. To his industry, perseverance, and talents, this country is indebted for its improvements in this Science. By his superior knowledge of it, he

became a teacher, and with infinite la-
-bour and difficulty, he instituted a
public school for Anatomical Studies.
To the brilliant honour of being the most
perfect master of the science himself, he
added the more meritorious one of making
his pupils so also.

A certain portion of Anatomical know-
-ledge has at all times been allowed to
be necessary to a Surgeon; but this has
been a very limited one. It is on this ac-
-count that the student, finding the pro-
-fession surrounded with uncertainty and
darkness, has turned away to pursue the

up as an appendage of Medicine, or retired to some other occupation in disgust. A general knowledge of Anatomy is by no means sufficient, nor must that knowledge of it be acquired by Theory. It should be learnt in such a manner, as to be ready for use at all times; it should not be to seek when it is wanted, but [illegible] occupy the place of certainty. It has been thought that minute Anatomy was necessary only for Teachers, but too much cannot be known, too little may. Yet whatever diligence has been used in the acquirement of it, all

What has been learnt of so intricate a science, can never be remembered, nor always how to apply it.

Anatomy is the groundwork of the Profession of Surgery, but it will not make a practical Surgeon. After having attended to Anatomy, the Animal Economy is to be minutely studied. It will otherwise be impossible to investigate the Oeconomy of Disease; for if the natural actions of the body are not understood, the diseased ones cannot.

The first of these two principal Studies is to be learnt in the Schools; the last

by attention to Diseases, which is best
done in Hospitals; a part of Surgical
Education too little attended to.
Then are the qualifications necessary
for the profession of Surgery, an den-
-able the Surgeon to understand, what
would be otherwise unknown to him.
By these, little else than dexterity
and firmness of mind are requisite to
make a good Surgeon; who should
not only be fearless without Opera-
-tions, but know his own powers tho-
-roughly. In these accounts great
cities are the only places adapted

to the Study of Medicine and Surgery,
and more particularly the Hospitals;
where every variety of disease is seen, and
every Operation performed in various
manners, so that the Student is en-
abled to judge for himself.
In his attendance at Hospitals, the
Student is naturally led away to
Operations of the greatest consequence,
or which are most admired, and he
is too inattentive to the more common,
and consequently more necessary ones.
But the most diligent attention to
all is necessary; for neo Genius will

avail but little; judgment, matured by Study and Experience, will be of infinitely greater utility. If the parts of Surgery are to be understood, before Operations are attended to. The various effects of Disease on different Constitutions are to be attended to; they are very various and sometimes extraordinary, and account for many otherwise strange occurrences. These, then, are the principal Studies necessary to make an operating Surgeon, and they are furnished out with more confidence, as this was the plan pursued by the late Mr. John Hunter,

with such peculiar eminence and success. He may be held out as an example to others, who, though they may not equal him, may yet gain fame and reputation by pursuing the same steps.

Operations are generally considered as acts of cruelty, and consequently Operators as void of feeling and humanity; and the calumnys and sirmmys of mirth, which frequent passers at scenes of misery, teaches, are attributed by the ignorant to a hard heart. But that sensibility which takes away

the power of administering assistance
to those in distress should not be
misplaced confidence. The restraint
which the Surgeon puts on his own
feelings, which strives for the relief
of others, and answers for the success
of his Operation, renders him in some
measure insensible to the sufferings
of the patient; on a principle not un-
like that which shall enable a mo-
ther to hold her child during the
performance of a painful Operation;
putting a restraint on her own fee-
lings, and intent only on the suffering

and safety of her infant. There is cer-
-tainly nothing in Surgery that can
augment tenderness and feeling;
but at the same time there is no-
-thing which can harden the heart,
or deaden benevolence and humanity.

No one can operate well, who does
not place implicit confidence in
himself, for the mind must be pre-
-pared for every emergency. A student
should not suppose, that because he has
seen an Operation performed, and can
trace the different steps of it, that he
is able to perform it; many things

~~things~~ being requisite, which will es-
-cape the eye of the most attentive
observer, and which none but the o-
-perator himself can see the want of.
Particular attention should be paid
to the different modes of performing
an operation, and the different in-
-struments used. No should it be
determined beforehand what is to
be done, as some peculiarity or o-
-ther will arise in every individu-
-dual case. Prejudice towards any
particular instrument should be a-
-voided, lest the surgeon become

-pised, if it does not answer the pe-
-culiar circumstances of the Case, or
he should not be able to use it with
the same dexterity as the Inventor.
There are Cases, where the Operation may
be performed in a variety of ways: as,
for example, in the operation for
puncturing the bladder. The par-
-ticular Case should then be consider-
-ed, and the most convenient and
safest mode chosen. No instrument
should ever be used, the use of which
is not thoroughly understood. As
the time of an Operation is anxious,

particularly to a young Surgeon, eve-
-ry previous arrangement should be
made, to prevent unnecessary de-
-lay and confusion. Good assistants
are of great consequence; They are to
have no opinion of their own, but
are to enter completely into the views
of the Operator, and consider them-
-selves as merely mechanical, and
part of the Instruments.
In any other Place than London,
it would not have been proper, to
have named the requisites to form
a good Practical Surgeon so parti-

-bly, or to such an extent; but as they
are all easily attainable in this ci-
-ty, which is equal, if not superior, to
any in Europe, as a School of Me-
-dicine and Surgery, the impropriety
would have been in omitting them.
This is the only place, where from
a variety of circumstances, Anato-
-my can be taught without
interruption; where Hospitals are
open for the students, and afford them
the most invaluable opportunities of
study; where disease is seen in all its
varieties, and in every form; and where

the practice of different Surgeons and
the different success and efficacy of each,
may be witnessed and attended to.
Such are the points on which we
build our eminence as a medical
School, such the advantages offered
to the Students of it; advantages
sufficient to excite the industry
of every man; to make him am-
bitious of eminence, & raise him
to the head of his profession.
But all depends on the diligence
and attention of the Student
himself; with such advantages.

it is unnecessarie not to become master
of his Profession; whereas the good
effects of present industry will be
felt in every step of his practice as
a Surgeon.

Lecture the 2d.

Inflammation and Fractures.

By a law in the animal Economy, there are always certain processes taking place in every part of a living body, when injured, for the recovery of that part; whether the injury is the consequence of accident, or of any Surgical Operation. It is therefore the first duty of a Surgeon to make himself thoroughly acquainted with these natural actions, that he may know where his assis-

In the earlier ages this nation was ranged among the Surgical diseases; and it has only of late been considered as a series of salutary actions, by which the various injuries to which the body is liable, are cured. Inflammation is now no longer considered as a disease, but rather as a kind of natural Surgery.

-tance is requisite, and when Na-
-ture may be left to herself.

The action, by which parts injured
are repaired, is termed Inflammation.
This action will be first considered
in soft parts; afterwards in the bones.
It is divided into three parts: Union
by the first intention; union by the
adhesive stage; and union by
Suppuration and Granulations.
If a wound is made through the skin
and cellular membrane by a cutting
-cutting instrument, the first conse-
-quence of this incision will be, that

2 from properties peculiar to it.

~~that~~ a certain number of vessels are
divided, which immediately throw
out their contents. The blood thus
thrown out coagulates, and forms a
cement between the two divided sur-
faces. But it is not the whole of the
blood which coagulates; the red glo-
bules are absorbed; the serum sepa-
rates during the coagulation, and o
oozes away; and the Coagulable Lymph
only remains; this will become solid,
and receiving vessels into it from
the surrounding parts, afterwards
undergoes such changes in its tex-

-ture, as enables it to assimilate itself to the parts, which it unites. A res-toration of parts, arising simply from this process is, what constitutes Union by the first Intention, which should be affected by the Surgeon, whenever he has it in his power.

If the wound is so large, that the edges cannot be readily be brought together, or if they are suffered to re-main apart through inattention, and the extravasated blood escapes, the bond of Union is then gone, & some change must necessarily take

place in the action of the vessels, to
produce a fresh one. This is effected in
the following manner; the parts be-
come increased in volume, heat, and
redness; the red blood, in consequence of
the dilatation of the vessels, is thrown
into those, which should only contain
coagulable lymph and serum; the
action of the muscular coats of the ar-
teries becomes increased; the blood
is consequently carried with greater ra-
pidity into the smaller vessels called
and into the veins, which become pro-
portionably more dilated than the

arteries. The smaller arteries now throw out a separate portion of the Blood, which is coagulable Lymph; and this forming a cement like the former, becomes vascular also, & at length the same as the parts, which it unites.

By this process the nature of the wound is altered; it becomes more tender from the increased size of the vessels; redder from the greater quantity of blood contained in them; and softer, from the greater quantity of blood likewise, though more

more so, than the Standard heat of the body) and not from the Inflammatory state of the Blood, which does not increase its heat. The effect of these changes is the exudation of coagulable Lymph, which takes place, separated from the Serum and red globules, enabling it to coagulate much quicker: This is well illustrated in Inflammation of the Internal coats of Veins, where the coagulation takes place so quickly, as to prevent, ~~as it proceeds~~ the coagulable lymph from uniting with,

or being washed away by, the current of Blood. This second process has been termed Union by Inflammation, or more expressively by Mr Hunter, the adhesive stage of Inflammation. The only service the Surgeon can be of here, is, to bring the edges more closely together, that a smaller quantity of coagulable lymph may suffice for the union; or if the action of the vessels is too violent, to soothe it.

If the edges of the wound are so much dilated, that this mode of Union

cannot take effect, and the coagulable Lymph, although it lines the sides of the wound, is not secreted in sufficient quantity to fill it up, Nature goes on to the third process. The surfaces have the connections of their vessels severed, so as to throw out a fluid, which, from its not being found in the blood, may be called a Secretion: it is known by the name of Pus; it has the appearance of cream, and, when examined with a microscope, is found to consist of an infinite number of

small opaque globules, swimming in a transparent fluid. There is also a secretion of new flesh, termed Granulations. These are ~~very vascular~~ of a florid red colour, and vascular in their structure; they arise in succession, one over the other, covered and defended by the Pus: why this is the case, is entirely unknown. But it appears to be absolutely necessary.

When they have risen to a level with the surface of the skin, they contract towards the centre of the wound, and become covered by a thin transparent

pellicle, which is afterwards converted
into skin; This new skin, however, differs
in some degree in its properties and
durability, from the natural skin.
But while this process is going on, the
adhesive stage of Inflammation
does not cease; for, continuing, and
setting bounds to the secretion of
Pus, it prevents its being carried in-
to the neighbouring parts,
In this stage there is likewise ano-
ther process going on, for the coagu-
lable lymph, not having answered
the purpose for which it was intended,

1 The granulations have a contractile power peculiar to themselves, which increases as they approach the skin, so that the quantity of new skin formed is considerably lessened.

2 If there is no external wound,

is afterwards removed by the absorbents.
Thus, it is by means of the arteries, that
parts are renovated, and by means of the
absorbents, that the superfluous parts
are removed.

Inflammation, then, forms a series
of natural and salutary actions, arising
from principles existing in the ani-
mal Economy, totally unconnected
with Disease; and if these actions
go on regularly in a healthy con-
stitution, the wound will heal,
and there will be little or no need
of Surgical assistance.

the same process takes place, and if the inflammation be very great, an abscess forms. the latter stages of which are precisely similar to a wound.

1. all these prevent the process of Inflammation from going on in a healthy manner, & tho' the constitution should recover the part itself shall long labour under these peculiarities.

2 & these only,

But there are too often unfortunate peculiarities in the constitution of the patient; and as much as the constitution deviates from a state of health, so much will the actions carried on in Inflammation of any wounded part. Some constitutions are irritable, in others the parts are indolent; in others, they are weak, or their actions fall short of what they are intended to perform; in others, again, there is some specific disease. Are there deviations, that become the object of the Surgeons attention; but they

I B open a field of such infinite
extent,

and the sensibility of the
nerves increased,

are so numerous, that it is altogether impossible for one mind to comprehend the whole of them.

When the constitution is irritable, that is, when instead of coagulable lymph being thrown out in sufficient quantity to unite the surfaces, the Inflammation, which takes place, does not perform its office; when it is attended with pain, and instead of their natural ~~colour~~ pale, the parts are of a lighter colour; when this colour is farther extended than naturally, and the parts are overheated; specially when

the granulations are less compact,
broader, higher, and paler than usual,
and the pus is thin and greenish;
in this case both the constitution
and parts must be watched, & applic-
ations made use of locally, which
will prevent the parts being hur-
ried on too much, and diminish
the Inflammation, and sensi-
bility of the nerves. These prin-
cipally consist of the different prepa-
rations of Opium, Lead, and Hem-
lock. In some instances Carrot
poultices are of greater efficacy

than any thing else. In one instance
where almost every application had
been tried in vain to an Ulcer, and
nothing but a Carrot Poultice would
was of the least service; the Carrots
being accidentally warmed, the Ul-
-cer healed almost immediately.
But much caution is required in
the treatment of these Ulcers, as the
slightest variations frequently pro-
-duce considerable changes.
Where the parts are indolent, Sti-
-mulants should be applied; but
this state is very often connected

particularly to the lower
extremity.

with weakness. Here nutrient affords the greatest assistance, and this can only be properly applied by Adhesive plaister. There are many other applications which excite action without irritating; as salt water, Charcoal &c.

I have here only treated of these varieties separately; but they are often so mingled together, that it is difficult, and sometimes impossible, to distinguish them from each other. The Inflammation too is often of a Specific Nature,

al, for instance, that arising from Scrophula, Cancer, and the Lues Ve-nerea. The poisons of these disturb all the actions of the constitution; and the different peculiarities of the latter are intermixted with the specific qualities of the for-mer. Of course, the last must be got rid of, before the other can be removed.

When the Surgeon is unacquainted with the nature of the Inflamm-ation, he should begin with the most simple means, and, if

nothing so materially as in

2 to give firmness & stability to

them.

3 may enable

these do not succeed, provided to more powerful ones. The processes here enumerated should be attended to, in wounds and operations of every description, and the deviations from health observed.

The bones differ from the soft parts of the body ~~—~~ in possessing a portion of Phosphate of Lime and other materials, which ~~—~~ then ~~—~~ resist the action of the Muscles. They are less vascular, & consequently their powers of healing are less. In their original formation

-tion, the soft parts are formed first, and the earthy matter deposited afterwards. Flat bones are substituted by membrane, before ossification takes place; Cylindrical Bones, by Cartilage; and the same change takes place, when a portion of Bone is to be restored, as in the original formation. Thus, if part of the Skull is to be removed, membrane is formed first; if part of a Cylindrical Bone, Cartilage. And it is in the repair of Bones that the Surgeon can render so much assistance, by bringing

the fractured ends of the Bone nearer
to one another, and retaining them
so.

We will suppose a Tibia simply frac-
tured, where the extravasated blood
is, of course, unable to escape. We
will say that the surrounding parts
are lacerated by the broken ends of
the bone, and filled with blood; and
that they are more or less swelled,
as every fracture must create a cer-
tain degree of commotion.

The blood in the soft parts is ab-
sorbed; but that interposed between

the fractured parts becomes Car-
-tilage, and afterwards earthy mat-
-ter. When you are acquainted with
this, the whole of the treatment of
Fractures is understood.
The bone is to be brought to its natu
ral position, and so kept. Enough
confinement should be used to keep out
the leg; more or less according to the
nature of the Fracture, which may
be either transverse, oblique, or splin
-tered; and different treatment will
be necessary under these different
circumstances. When the Fracture

& the broken surfaces sufficiently angular to keep in contact,

is transverse, all that is required is to bring the ends into Opposition, and their roughness will prevent them from slipping asunder. Lateral compression, however, has been used in order to secure them still further, & to guard against the involuntary actions of the muscles during sleep, which would otherwise displace them. If the fracture be oblique, and the ends of the bone lie one on the other, or, as is commonly said, ride, compression is absolutely indispensable. There are instances, in which

no lateral pressure will be effectual,
and then Extension must be had re-
course to. The pressure should be
regulated according to circum-
stances, lest by being too great, the
bond of union should be prejudicial.
These Fractures labour under ano-
ther disadvantage; for the points
of the bone are apt to prick the
surrounding parts, and thereby
irritate them. Convenient, there-
fore is proper for three reasons:
first, to keep the limb straight;
secondly, to prevent the bones

being displaced by spasm; and third-
-ly, to prevent the too great formation
of Callus. It seldom or ever does in-
-jury. A friend of mine was called
in to a Gentleman who had frac-
-tured his arm, and bound it up
very tight; tension and inflam-
-mation came on, and the Gen-
-tleman lost the use of his arm.
Supposing this to be the effect of
ill treatment in the Surgeon, he
entered into a law-suit concern-
-ing it; but in reality the blow
which had fractured the arm, had

injured the nerves.

When a limb is ~~injured~~ fractured, in what position should it be placed? Much dispute has arisen whether in the bent or straight position. The great object, both for the ease of the patient, and the reputation of the Surgeon, is that the limb be made straight. For this purpose, the straight position answers much the best, as the patient is capable to lie easier on his back than on his side for any length of time.

After the limb is set, the Surgeon

1 adulte

is to be regulated by circumstances.
In children, callous will take three
weeks to form; in men, a month,
and in old people much longer. If
the limb has made no progress towards
union at the end of five or six weeks,
the patient should be set on crutches,
and the limb unconfined, and exercised
by degrees, by which means, union
will generally be effected.
In fractures of the os Brachii, the
weight of the forearm draws down-
wards, if light bandages are used,
the natural bond of union will be

moved down towards the Elbow. This should be kept in mind, and the pressure made to bear on his Elbow. If this is not done, Nature grows weary of forming new Calous, the fractured ends become covered with Cartilage, and an artificial joint is thus formed. An Operation is necessary but worse than. The one usually recommended in books, is to cut down on the bone, saw off the two fractured ends, and make a compound Fracture of it.

Mr. Hunter used to cut down on the part, and excite Inflammation by

2 burning Nit

rubbing the two ends with an iron instrument, and by this means Calcines was thrown out sufficient for Union. This undoubtedly appears the preferable method. If Union cannot be effected thus, the patient can only be relieved by Amputation.

Lecture the 3d.

Amputation.

Before we proceed to the manual operation, it will be necessary to consider when it is requisite, and under what peculiar circumstances it ought to be performed; for though it is highly proper to know how to perform any operation, yet it is still more so to know when it is requisite. ~~Perhaps~~. There is no subject in which more judgment & more experience is wanting; and from a deficiency in this point, a Surgeon

frequently loses his reputation.

The cases, which most commonly become fatally, or require Amputation, are the following: Compound Fractures, particularly those arising from Gunshot wounds; diseased joints & bones; and arteries partially divided.

These are the principal ones, & those which will be now taken notice of.

Compound Fractures vary in the degree of danger, and mode of treatment according to the ~~degree~~ nature of the external and internal mischief. If the external injury is small, and the parts internally

as those produced by a common ac-
cident. But when a musket
ball penetrates thro' the skin
& strikes the bone, it shatters
it into a thousand pieces &
forms a slough thro' its whole
course. As it is impossible here
to heal the wound by the first
intention, all the inflamma-
tion necessary is sufficient to
seperate the sloughs. & there is
consequently less than when the
wound arises from any other cause,
and that at a later period. The
shattered bone being dead, an
abcess forms round the pieces;
& here considerable management

are not much lacerated by the fractured ends of the bone, the fracture should be treated as a simple one. This may be at-tempted as long as there is any Hæmorrhage remaining: blood is the bond of Union; and as long as there is any fresh blood thrown out to perform its of-fice, some hopes may be entertained of success. Even where the external wound is large, if the inflammation brought on will admit of it, the same practice may be attempted: it will al-ways succeed in young persons better than in old ones.

is required for the external orifice
of the wound is allowed to heal
there will be much the diffi-
culty in getting away the
matter & dead pieces of bone,
& if this is not done, the life
of the patient will be misera-
ble. Another peculiarity at-
tendant on Compound Fractures
from gunshot wounds is, that
large vessels are often wounded in
such a manner, that they carry
on their action till a slough
is thrown off, & the patient
immediately dies. In some cases
a nerve is so injured that it never
recovers.

An extraordinary instance of this hap-
-pened some time ago at St. Georges
Hospital. A boy was brought in during
the night, who had fractured both the
Tibia and Fibula of one of his legs; the
fractured end of the Tibia protruding
upwards of two inches through the ex-
-ternal wound. The House-Surgeon
was unable to reduce it, and left it
sticking out. It was twelve hours after
the accident before I saw it, when I
reduced it with considerable difficulty;
the wound, however, healed by the
first intention, the bones became per-

-petly united, and the wound healed as well as any simple fracture. This is an extreme case, but it shews what may be attempted.

When the external and internal injury is great, Suppuration takes place, and extends itself among the lacerated parts; loose pieces of bone produce irritation; sinuis form, and exfoliation ensues. The strength of the patient soon becomes exhausted by confinement and the continued irritation; hectic fever follows, and by the Surgeon is reduced to the necessity of Amputation!

When a ball passes through a leg or thigh, and the bone is fractured; if the surrounding parts are much lacerated, the mischief is too great for the limb to recover itself: then again Amputation is necessary.

In some instances, where this accident occurs, the bone shall not only be fractured, but a joint shall likewise be injured. Although either of them alone might be within the power of recovery, yet both together render it utterly impossible.

Some cases of compound Fracture de

not give an idea of the Operation, like the constitution of the patient is my hands they seem to require it immediately. As the patient most likely to recover; if Amputation has been performed immediately after the accident, or when the first symptoms have gone off? This question is of the greatest consequence, and applies equally to all other Operations. It is found, contrary to what one would suppose from Theory, that a person in full health is in the worst possible state to undergo an Operation; for the shock both to the

body and mind in such a person is much greater, than in one worn down and exhausted by Disease.

In the field of battle, the proportion of those who sink under, to those who survive, immediate Amputation, is very great. At the siege of Valenciennes, so many men were placed in the trenches, and exposed to the enemies fire, that the Compound fractures were very numerous, and a great many underwent immediate Amputation. Of very few of these recovered, that the Surgeon to the King of Prussia spoke

a general order that no one should pass
from Amputation, immediately after
the wound was received.

The same observation holds good every
where; for the patient seldom recovers
from immediate Amputation. On
the contrary, when the patient is
lowered by the Inflammation, and
symptomatic fever, there is a much
better chance of success.

Experience, then, teaches us not to
perform the operation of Amputation,
till the first Inflammation has
subsided, or else the injury has been

such, as to render it impossible for the patient to get over it. And I will carry this remark still farther, by saying that it is almost incredible, in what exhausted subjects Amputation is successful. I have known a patient with night-sweats, shiverings, loss of sleep and appetite, sleep all the night after Amputation.

In diseased joints, there are no such difficulties to encounter; and indeed no patient would submit to an operation, till he was worn out by the discharge, irritation, Inflammation,

fever, and pain, which is sometimes in-
-supportable. The operation is frequ-
-ently here, principally on account of the
constitutions giving way to these symp-
-toms, and it may be performed with
safety, when the patient is very much
reduced. Even when night sweats and
shiverings have come on, and the pulse
is very low and weak, if the vomiting
cause be removed, the constitution will
rally, and the patient do perfectly well.
The following case is a remarkable exam-
-ple of this kind: A sailor, wishing
to get out of the service, applied a

caustic below the knee, which, contrary to his intention, affected the ligament of the Patella, and the joint became extremely diseased. He was in time so reduced, that his life was despaired of; but, though he was too weak to be removed from his bed, I performed removed the limb, and the irritating cause being taken away, the patient perfectly recovered.

The same reasoning holds good with regard to diseased bones. There is no necessity for performing the Operation, unless when bone's pain, and mischief is done

1 This is out of the reach of Surgery.

The symptoms of Concussion correspond almost exactly with those of Intoxication. If the shake is not very violent, there will be that derangement which takes place in a half-intoxicated person; if it is of greater violence, the impossibility of one completely drunk. It would therefore appear necessary to enquire what state the patient was in, when the accident happened. If he was sober, you may venture to say that the symptoms before you are those of Concussion; if drunk, there is no knowing what they are, and it

will be therefore be prudent to wait,
till Intoxication ceases, before the Na-
-ture of the case is determined upon; as
it has frequently happened that a
drunken man has been treated, as one
having an injury of the brain.
When the symptoms are merely those of
Concussion, they will subside within a
limited period of from two to twenty-
-four hours. But when having gone
off, is no security for the recovery of
the patient from the injury; for, tho'
he shall appear perfectly well, and
shall return to his former avocations,

to the surrounding parts.

Another more rare occurrence, and one not commonly understood, is the partial division of an artery, by a wound from a sharp piece of bone, or pointed instrument. Thus no opportunity is given for contraction of the muscular coat, and if the artery is not within reach of being taken up, the limb must be removed. When this is attended by compound fracture, it is utterly impossible to get at the artery, after the first inflammation has come on; it is so enveloped in broken pieces of

bone, and the swollen parts. In these cases, it bleeds, till the constitution is exhausted with loss of blood; it then stops: but as soon as the heart and arteries in the last receive their energy, the same process takes place again, and so on, till the patient sinks.

The following are cases in point:

The leg of a sailor was fractured by a blow from a cable, and the Posterior Tibial artery wounded by a piece of bone. The efforts of Nature to stop the hemorrhage were twice; and the limb

It is very common among
Glaziers, who are apt to cut
their hands with broken glass.

was at length resorted; but too late, for the patient died, exhausted by the hemorrhage, which had already taken place. The forearm of a woman who died was wounded somewhat in a similar manner. Amputation was here also performed too late. In this case, had the nature of the accident been understood, the artery might have been taken up. If possible, in wounds of this kind, the artery should be totally divided, and allowed to contract.

having said thus much of the Cases in
which Amputation is necessary, we will
now proceed to the Operation itself.
And first in the lower extremity, sup-
-posing the injury to be about the an-
-kle joint. The difference of danger so
great between Amputation above
and below the knee, that it will be
prudent to run some risk to avoid
the former. If the Inflammation &
thickening of the parts extend nearly
up to the knee without affecting the
joint, the knee may be saved; but this
must chiefly depend on the judgment of

the Surgeon. But, as I said before, in opening the joint in the ankle, in what part is the knife to be removed? There is but little latitude for performing the operation in any part of the Leg.

Formerly it was the practice to Amputate very low; but if the patient is to work for his bread, the limb should be amputated in such a manner, as to allow him the greatest use of his thigh and knee; and this is best effected by amputating high up in the Leg, at a sufficient distance from the knee joint, to allow of an artificial

been given to the Stump.

But if the patient is in a high rank in life, something may be sacrificed to fashion, and the appearance, as well as use, of a leg, considered. By amputating lower down, more bold is given for a false leg; the motives of which have brought them to such perfection, that it is difficult to distinguish them from natural ones.

Having settled this point, the first step of the Operation is the application of the Tourniquet; which may be commonly applied with perfect

apply on two different situations, either
on the femoral ~~artery~~, or the popliteal
artery ~~in the thigh~~. Care should be ta-
-ken that the Tourniquet effectually
stops the current of blood through
the artery to which it is applied: and
the more effectually to prevent this
from failing, a pad and bandage should
be first applied, the pad being placed
immediately over the artery.

Over this the Tourniquet is to be fastened.
Attention is to be paid to the screw of it;
it should not be too oblique, lest the Tour-
-niquet turn down again. In order to

remedy this, some instrument makers have placed a catch at the end of the screw; the consequence of which is that the instrument is rendered much more complex, and if the nature of the catch is not understood, the catch cannot be let down, when it is wanted.

The band of the Tourniquet is to be double, as there is then less chance of any accident happening from its breaking, and one purchase for the screw of the instrument. During the war in Flanders, complaints were made, that the Tourniquets broke on

application, and that the life of one patient had been lost by it; but the fact was, they did not understand how to use them.

It has been customary to use buckles. Now buckles are made at Birmingham; they are smart, fashionable, things enough, and form a very pretty ornament to a Tourniquet. But they are not in the least to be depended upon; some are good, and some are bad; some will break, and some won't; in short it is a mere chance whether they break, or not. As, therefore, the

life of a patient is not to be wantonly put upon a chance, the use of them should be avoided, and the band tied instead. The Tourniquet should be applied exactly opposite the seat.

If the limb is at all edematous, what on the first application was tight, shall, by pressing away the fluid into the surrounding cellular membrane, become loose. It may again be tightened, but upon persistence in, the fluid rushes out, and again it becomes loose. This can only be remedied by applying it, and reapplying it afterwards.

As the management of this instrument
is the most important charge of an
assistant, one should be chosen, who
can thoroughly be depended upon.
The Tourniquet having been applied,
the operation is to be proceeded with.
But first, how is the Operator to stand?
If has been directed, to stand in such
a manner, that both bones may be
sawed through at once; thus, if the
Surgeon is to operate on the Leg, his right
hand will be towards the patient,
if on the other, his left. But sawing
through both bones together is found in-

ment; the Operator should always
stand with his left hand towards
the knee, as he can depend more on
his own hand than that of an assis-
tant, who is apt to flinch, from fear
of having it cut.

Is it right to apply the tape or not?
if it is meant as a guide to make a
circular incision, I should say, certain-
ly not; for no Surgeon is fit to per-
form this operation, who cannot
make one without any guide. But
if the parts are loose and flabby, rol-
ling it three or four times round the

leg, serves to give firmness to them, and prevent the skin from folding and wrinkling under the knife.

In this operation, the joint of the knee is to be entirely avoided, and at the same time the Surgeon should be careful not to leave too great a length of Tibia. The external incision should be an inch and a half and an inch and a half lower than where you intend to divide the bone. The assistant should draw the skin up towards the knee; and the first incision should be made opposite to the side, on which

the operator stands, but not too much on the upper surface, as he must incommode himself by so doing. He should begin with the root of the knife that he may have the whole blade, least of the blade. The incision should be made through the skin and adipose membrane only; the operator is therefore to use a drawing cut without pressure, least he cut down into the muscles. There is no object in making the whole but one incision; on the contrary it throws the operators body into an awkward position. The

knife should be drawn to the opposite side of the limb, as far as is convenient; then turned, and applied to the other side, and the incisions made to meet. This being finished, the Amputation knife is to be laid aside, and with a scalpel the skin and cellular membrane are to be detached upwards in all directions, in sufficient quantity completely to cover the stump.

Then, resuming the Amputating knife, an incision is to be made through the mass of muscles down to the bone. The Catlin is to be afterwards intro-

duced between the two bones, with the edge horizontally, lest they strike against either of them. Next the anterior muscles and extensor ligament are to be divided, and both bones perfectly cleared. The muscles and periosteum of the fibula should be detached half an inch higher up than that of the tibia. The advantages of this are two fold: first, the fibula is not buried in muscle, that there is no chance of its perforating against, and making its way through the skin; and secondly, it enables the operator much more easily to get

its arteries are much larger, and generally more numerous, and there is a larger mass of Muscle. In some cases, where there has been considerable Inflammation, it is astonishing what a number of small arteries must be secured, sometimes fourteen. This operation is of greater consequence, and the femoral artery, as I have before stated, is to be taken up with a needle. Plenty of skin should be left, rather too much than too little.

Cases are sometimes met with, where the arteries are so diseased, as not to close up their orifices, when the ligature comes a-

-way. Of this the Surgeon should be aware.
In secondary Haemorrhage, which is often
the consequence of an attempt to heal the
stump by the first intention than a-
-ny thing else, as the vessels which con-
-tract on exposure to air, expand again
when they regain their natural warmth,
it is sometimes very difficult to find the
bleeding vessel.

At the interosseous artery, which lies in a groove within it.

This done, the Fibula should be first sawed through, rather higher up than the Tibia; and the retractor may be used either before or after this. The Tibia is then to be divided with the saw.

The operation itself may now be said to be finished; but while the vessels are to be taken up; and here the Surgeons Anatomical knowledge is to be used, in order to find out their situation.

There are three principal arteries to be taken up; two Tibial and an interosse-

-ous artery. These should be secured with a tenaculum, for when this instrument is used, the ligature commonly comes away much quicker, than when the needle is used. Besides these, there is a general oozing of blood from the stump, which will cease spontaneously. The assistant should now slacken the Tourniquet, by which means, the smaller branches will become visible, and, as many as require it, may be secured. Some degree of oozing also commonly takes place from the bone.

All arteries of a less size than the Brachial and Femoral, should be taken up by the Tenaculum. To them, however the needle should be used; for in a person, in any violent motion or exertion such as going to stool, the force of the heart here is so great, as to force off the ligature now and then, and of course the patients life must be lost. This once happened to a patient of Mr. Baron Seibels, who invented the Tenaculum, which is undoubtedly one of the greatest improvements in modern Surgery.

It is advantageous to apply a roller from above downwards, which will prevent spasm, and the skin from retracting. The cut surfaces should then be brought together either perpendicularly or horizontally, as the skin will lie best. The former is perhaps upon the whole preferable; as, by bringing the ligatures out at the bottom of the wound, a drain is formed for the serum, and pus which is formed, to run away; this, however, must be determined by circumstances. In bringing the skin together care should be taken to draw

the Ligatures out straight, and that none remain in. The edges of the wound are merely to be brought into contact, not squeezed together, nor made in the least to lap over one another. For this purpose adhesive plaister answers best, as it gives support to the parts. The adhesive plaister is to be spread on linen, not on leather; which being an animal substance, when blood comes in contact with it and putrefies, is apt to corrode, and thus all the Surgeons labour is vain.

Not only the skin, but the cellular

membrane, muscles, and bone must be brought evenly into contact by means of Compresses; if this is not done, suppuration and abscess will be the consequence, and all endeavours to heal by the first intention computed.

The patient is of course to be kept perfectly quiet after the operation, to prevent Haemorrhage or Inflammation.

The same observations apply to Amputation of the Thigh; the only difference between that and the leg, being, that it has but one bone,

Lecture the 11th

Injuries of the Brain,
more particularly that part of this
subject, which requires the Opera-
tion termed Trepanning, from the
name of the Saw used in it.

Injuries to the brain are of three
kinds: concussion, compression, and
loss of substance. The first of these
is the most frequent: it is the im-
mediate effect of any violence com-
-mitted on the skull.
The symptoms produced by it, are
temporary derangement or delirium,

a total absence of the Faculties.
When there is nothing else connected with
concussion, the only treatment requisite,
is quiet, abstinence, and unloading
the vessels of the brain. But it too of-
ten happens, that the brain is not
only shaken, but so much injured as to
produce Inflammation, Suppura-
tion &c. And as it is utterly impossi-
ble to know the extent of the mis-
chief in cases of concussion of the brain,
it behoves us to guard against the
dreadful, the frequent, consequences
of it.

yet it is altogether consistent with this state of health. That mischief should be going on in the Brain. Although the symptoms of Concussion come on immediately after the accident, those of Inflammation do not make their appearance before from twelve to fourteen days after. It is therefore the duty of the Surgeon not to allow his patient any Latitude, before fourteen days are past; and if he does, he is responsible for any mischief that may ensue. In illustration of this, a friend of mine met me ac-

accidentally and told me that a niece
of his, about a week since, had knocked
her head against a tree, and that she
had been stunned, and sick. He wished
to know my opinion of it, adding that
he supposed it was of no consequence,
as she had been well even since. I replied
that it was of consequence, and that
neither I nor any one else could answer
for her life, until fourteen days
had elapsed from the time of the
accident. The next account he re-
ceived of her, was that she had
been taken ill on the fourth inst-

on the day, and shortly afterwards died. It is therefore impossible to be too circumspect.

When Inflammation comes on, how is it to be distinguished? The pulse is not the least guide. A person labouring under Inflammation of the brain shall have a quick pulse, a slow one, or a quiet one. The symptoms which are to guide us, are the affections of the head and stomach. If a patient at the end of eight or nine days from the accident, complains of headach, light

repeated stroke, it amounts almost to a certainty that something wrong is going on within the Cranium.

In this case, the quantity of blood passing through the brain is to be diminished; that is, the patient is to be bled as copiously and frequently as he can bear. If these means fail, what is to be done? We are to proceed a step further than in Cases of Concussion, where no operation can be necessary: but here an operation is our only chance of success.

Now, is an operation to be performed

in any case of Suppuration? If it be
in the middle of the brain, an Op.
ration will certainly be of no use.
But if it is on the surface of it, a be-
tween the pia and dura mater,
a between the latter and the cra-
nium, it will be of the greatest use.
When the pain is fixed to a par-
ticular spot, or a portion of the
scalp has been accidentally injured,
and the marks remain; and where
the symptoms run so high, as to
threaten the life of the patient,
there can be no hesitation about

performing it, and it certainly sometimes causes Life.

Having said thus much of Concussion, we will now proceed to consider Fracture of the Cranium. This may be simple (when it is termed fissure), or it may be considerable in itself, and a number of pieces of bone may be even detached. It may be also attended with depression, or laceration of the blood vessels, which will produce Hæmorrhage. The fracture itself does not necessarily produce compression; for if the bone retains its

natural shape, the brain is no more compressed, than if there was no fracture at all. The necessity of an operation here does not, therefore, arise from the fracture, but from the depression or extravasation of blood, with which it is attended.

Much dispute has arisen concerning the propriety of the operation of Trepanning. There are authors, who recommend always trepanning, to prevent, as well as set to rights, mischief; on the contrary there are others, who from having seen many cases do well

without it, a device were to be seen at all. Truth in this, as in most other subjects, will be found to lie between. The depression is certainly not to be performed without necessity; and a fracture without depression, or depression without symptoms arising from it, gives no reason at all for it. And it is a common fact, that the brain of one person shall not bear the smallest compression with impunity, while that of another shall bear very considerable compression

without any symptoms at all. I have known a patient have headaches and fits, when nothing but a small depressed line scarcely larger than a hair was visible on the outside of the cranium, and where after the operation, only a small portion of the internal table of the skull had been depressed. This being removed he perfectly recovered. I have seen another, where half a pullets egg might be laid in the depression, and not a bad symptom arise from it. So that the symptoms, and not their cause

-ses, are to form the criterion of the propriety of the Operation.

We will suppose a Case has occurred where the symptoms of Concussion and Compression are considerable; how are they to be distinguished from one another? Those of Concussion are, as was before stated, either delirium or fits; those of Compression are most commonly Coma, one of the strongest of which is a want of power in the lips to do their office, so that the patient should breathe with Stertor. If these symptoms are present,

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depend upon it, Compression is present also.

These symptoms may be less marked, but it is my duty to point out the strongest outlines, & your own judgement must shew you the variations.

Under these circumstances, it is necessary to relieve the brain; and having marked on what part of the brain the injury is inflicted, it is to be laid bare on that part. It is generally directed in books to make a crucial incision; but a simple incision down on the Cranium is quite

sufficient at first to look for the frac-
-ture. Caution is required in this in-
-cision, for I have seen a Surgeon by
cutting boldly down to come at the
cranium immediately, plunge his
knife through the fracture into
the brain.
If on looking for the fracture, you
find it crossing your incision, you
are to make another in the direction
of it. If you find no fracture, the
bone may be denuded to the extent
of half an inch on each side, but
not farther; and, if on doing this,

a fracture is found, the whole apparatus of the mischief must be had.

The first consideration here is to relieve the Brain; the second, to expose the Cranium as little as possible; and it is to be recollected, that the Skull is composed of two Tables, which are separated from each other by the diploë; therefore, that the fracture of the internal Table does not always correspond with that of the external one. If this is not attended to, when you have got half thro' the operation, you may be proposing the

Round Table down on the Bone.

Suppose a Triangular piece of bone is to be removed. There are two ways of doing it; either by sawing through it at the root of the Triangle, or by removing a circular piece of bone, and raising it, or taking it away. This is to be determined on by the Surgeon, who should endeavour, in laying bare the Cranium, to save, if possible, sufficient of the scalp, to form a covering for the ~~perfo~~ perforated part of it.

In beginning the Operation,

Page

may be advantageous to use the Instrument without the tenaculum, when it is to be used much over the fractured part; a Surgeon should, therefore, be expert in the use of the Instrument both ways.

Many kinds of Instruments have been in use; but that appears to me the best which does its work the quickest. This seems best answered by a saw, divided by grooves into three portions, which work much clean-

-er and more expeditiously than
any other; and at the same time
the space between the jaw bone
allows the sawdust readily to
escape. There is but one objection
to this Instrument, and that can
scarcely be called one; which is,
that a person not accustomed
to this saw, gets through the
stalk, before he is aware of it.
To remedy this, it will be pru-
-dent to withdraw the saw fre-
-quently, and examine whether
any part is sawn through; and

if so, to press more on all the other parts. There is considerable nicety in this part of the Opera-tion; particularly where the part of the skull to be sawn through is of different degrees of thickness. Then, before you get through every part of the bone, it will be pru-dent to ~~secure~~ use the elevator, which will frequently remove it.

The older Surgeons were extremely averse to this ~~measure~~ method, and used the greatest caution to avoid making any splinter or

unevenness. But as the Substance will be absorbed, this method bears no proportion to the danger of wounding the Dura Ma-ter. This, though it may be pun-tured with impunity by the point of a Lancet, yet when wound-ed by any Chirurgical Instrument, is uniformly attended by Death. So that by wounding it with a saw, you are giving a death-wound to your patient.

What may at first appear incre-dible, is that the brain shall

be wounded, and the Inflam-
mation, taking place in conse-
quence of the wound, shall re-
unite it, and no further injury
shall take place. This is not the-
ory. for I once saw a patient, who
had received a ball in his brain,
which had been extracted, and no
symptoms arose from it. He was,
however, without cause beguan-
ned, the Dura Mater was
wounded, and he died in conse-
quence of it. Upon examination
after death, the wound made by

the bone, was found united by adhesive Inflammation.

Having removed the piece of bone, examine the dura mater. If it is of a yellowish white colour, and the pulsation of the brain is seen distinctly under it, there is no further injury in that part. Where it is brown, and there is no pulsation visible, blood will be found under it. Whatever there be under it, whether it be matter, or blood, or any thing else, it must be taken, otherwise you might as well leave

done nothing at all.

The Dura Mater should be punctured with a trocar in an oblique direction; so that a kind of valve may be formed, which will be less likely to admit air, or remain open, and the point of a probe introduced. The Inflammation, already produced, will heal the wound; so that here it is an advantage to be working upon diseased parts.

The external injury forms no entrance of the Agency, which the brain has received. On the contrary,

I would rather give a favourable opinion, when the external mischief was of great extent, than when it was trifling; for in the former, the force of the blow will be exhausted on the skull; in the latter, meeting with little impediment there, the shock will be more severely felt by the parts beneath.

I have known a case, where no external mischief occurred, although there considerable pieces of bone were removed. And I have seen another, where a very small external wound

was made by a kick from a horse, attended with almost instant Death.

It has been a question, how far wounded brain may be removed; but it will bear this or indeed any thing, better than internal derangement.

In one instance of a wound in the frontal bone, little less than a table-spoonful of one of the anterior Lobes of the brain was removed, & there were very few symptoms arising from it.

If a patient has a fracture, attended with depression, and you are

sure that symptoms must come on;
would it be proper to perform any
operation before they do come on?
In my opinion, it would not, for
the patient is more prostrated im-
mediately after the accident.
If vessels are bleeding, they will
bleed more than they otherwise
would do; and greater inflam-
mation would come on from ex-
posure of the parts to the air. In
one instance, I took to myself the
credit of opening the suppuration of
the patient, by waiting till the

symptoms of Concussion had entirely
gone off, and every thing was quiet.
This is the most common cause
of injury to the brain; but there are
some others which require attention.
Sometimes the skull thickens so
much in a particular part, as to
press on the brain; but the only
cure is to remove the thickened
portion. This will sometimes occur
after a very slight injury. Disease
known as Rot sometimes after a
course of Mercury produces an
evident thickening of the periosteum

and skull; and upon removing the bone, a fluid was let out from under it, which entirely relieved the patient from the fits he had been liable to.

Sometimes in ossifications of the pericranium, the Dura Mater shall become ossified also. Then an operation is the only chance of relief. A remarkable instance of the Dura Mater's sympathising with the pericranium was a short time since under my care. A gentleman, after repeated courses

of Mercury, had a lump on his fore-
-head. His medical attendants, suspe-
-cting it Venereal, were induced to re-
-sort again to Mercury. A first course
was therefore tried and failed, a second
was not more successful, and a third
was proposed to which he objected. He
consulted me, and I told him that
I thought the only chance of relie-
-ving him was to set down upon
the tumour, which I did. The wound
healed and the symptoms vanished
for three years, when they returned
more violently than ever.

There was then an evident fullness and blush near the cicatrix, and I advised that a portion of the Cranium should be removed, which was accordingly done, in presence of Mr. Cline and Dr. Baillie. Upon exposing the Dura Mater, it appeared vascular beyond anything we had ever seen; the whole surface being of a high red colour. After the Operation the symptoms increased from exposure of the Inflamed Dura Mater to the air; and fortunately an Haemorrhage

both place, by which he certainly lost a quart of blood. The next day, however, it was again necessary to bleed him, and the blood was very buffy. The inflammation of the Dura Mater at length went quite off, and his health entirely returned. Cases of this kind are much more frequent, than is generally imagined, and I am convinced that many cases, which are taken for, and treated as, Omental, are very similar to this.

Lecture the 5th

Herniæ.

A hernia, a rupture as it is common-ly called, in the full extent of the word is a protrusion of some of the vis-cera of the Abdomen through the boundaries of that cavity, in parts which may be either naturally or accidentally weaker than the rest, and consequently more likely to give way on the application of any force.
They are produced in several

different ways: by muscular exertion;
accidental violence, as by a fall
from a height, lifting great weights;
but the most common cause is a
violent cough. In a fall the ribs
are pressed so violently against
the lower parts of the Abdomen,
that they are unable to with-
stand the pressure, and a rup-
ture is the consequence. In lift-
ing a weight, the Diaphragm &
Abdominal muscles press so violent-
ly on the viscera, as to produce
the same effect.

I produce one at

They happen indeed under a va-
-riety of other circumstances. For
instance, a blow received on one
part shall produce a rupture in
in some other. It is impossible, that
it should ~~weaken~~ the part to which
it is applied, though it may so weak-
-en it as to produce a rupture at
some future period.
When a Hernia takes place in
the superior parts of the Abdo-
-men, it is generally through the
Diaphragm, which has given way,
and allowed a portion of Intestine

to protrude into the [illegible]
Thorax. This produces the usual ef-
fects, and being beyond the reach
of Surgical aid, must be attended
with death.

Ruptures are most commonly met
with in three situations; because
these parts of the parietes are
naturally weaker and less compact
in their substance than the rest
of the Abdomen, as they are for-
-med for the passage of blood-
-vessels &c. To these three kinds I shall
confine myself in the present lecture.

Navel, which is called Umbilical Hernia. In the two first the peritoneum generally forms the Hernial sac, but in the last the gut is commonly protruded alone. The Abdominal ring in the male, having given passage to the Testicle in its way to the Scrotum from its original situation in the Abdomen, and the vessels which supply the Testicle still continuing to pass through it, is most commonly the place where Hernia happens. As on these

ments the ring is larger in the male, than in the female, so the latter is less liable to this kind of Hernia.

Another kind of Rupture is the congenital. This is coeval with the life of the patient, having been produced before birth, when the passage for the testicle into the scrotum is still unclosed, and allowed any of the viscera to get into it. 3 This kind of Hernia may remain for any length of time without material inconvenience, but should inflammation come

on in the protruded Intestine or Omentum the disease becomes the same as under any other circum-stances. 2

A Hernia having been produced, the Treatment of it is the province of the Surgeon. As it is at first com-monly small, it seldom happens that the Surgeon is made acquain-ted with the first disposition to it; as the patient either from ig-norance or modesty conceals it, till it becomes so large as to excite his alarm. From exertion or fatigue

The tumour increases in size; and though ongoing to bed it again decreases, yet upon the whole it gains ground, and some omentum coming down with it into the scrotum, the symptoms become violent, before the phat. surgeon is consulted.

The mode of treatment must differ according to the peculiar circumstances attendant on the case; but it will always be proper to endeavour to return it.

The first thing to be done, is to

size. If it is not larger than a wal-
-nut, it may be protruded. That
no part of the mesentery is pro-
truded. This kind of Hernia is
particularly dangerous; for the
constriction will be proportionably
great, to the smallness of the Fora-
-men through which the gut Pass-
-es. The symptoms in these cases
are extremely urgent, when Strang-
-ulation has taken place, but when
this is not the case, they are common-
-ly very easy to reduce.

When the mass is large and de-

-scendent to the scrotum, the Sur-
-geon may conclude that part of
the mesentery has descended with it.
He must then consider whether the
Hernia is a common or congenital
one. The latter is less liable to
strangulations than the other kinds
of Hernia; and is rarer strangu-
-lated. But when the omentum
descends into the sac with the
gut, and causes adhesions. The
Constriction too is less violent than
in other Hernias.
If the gut is not strangulated, this

unnatural whether it is in the Scro-
-tum or Abdomen. But if pressure
is made on any part of it, the faeces
cannot be carried through it, and re-
-lief must be given, or death will
be the consequence.
The symptoms commonly met with in
these cases are sickness, reaching e-
-ven without food, and hiccup &c. A
serious consideration is, that the
Constriction not only prevents fa-
-ces, but blood also, from coming
to the part strangulated: this pro-
-duces Inflammation and conse-

-quent mortification. The particular
symptoms in this stage, besides
the others, are, great pain in the
part, especially on touch, the pulse
very quick and irregular, and gene-
-ral uneasiness over the whole Ab-
-domen. At length a peculiar cold-
-ness comes over the whole Body,
which may be easily detected by the
Touch. When the symptoms are
arrived at this height, nothing should
be attempted for relief; all attempts
to reduce the Rupture will be vain.

Before a Surgeon attempts

the reduction of a Hernia, he should be thoroughly acquainted with the Anatomical structure of the parts concerned in it. 3d The patient should be laid on his back, with his pelvis rather elevated, so that the weight of the Abdominal viscera should rather assist than oppose the return of the protruded parts. The Surgeon is to endeavour to return the Hernia, by placing his left hand on the ring, by way of a guide in the direction of the return, and with his right hand

press it towards the ring gradually. This in the first instance may succeed; and if air is found to pass from the strangulated gut into the Abdomen, or the ring cannot be felt, considerable hopes may be entertained of its success. But if the tumour has swelled much, and fills the aperture of the wound tensely up, it will resist the efforts of the hand, and require something more to be done, before it can be returned to its natural situation.

The warm bath should be next tried,

and it often happens, that while the patient is in the bath, the contents of the rectum will be returned spontaneously, from the great relaxation produced by the warm bath. If this, however, does not happen, an attempt should be made to reduce it when the patient gets sanguine and dry handed.

Diminishing the action produced in the system by bleeding will often be necessary; and the lower part of the intestines should be emptied by clysters.

If any of these trials succeed, a trial is to be applied: but if all the means used prove ineffectual, the symptoms are to determine whether any further delay is safe. If they are not so urgent as to exclude any further trials, Tobacco ~~& the injections and cold~~ may be tried. But how long a time is allowed to elapse before the operation is had recourse to, must entirely depend on the judgment of the Surgeon, and the symptoms are to be his only guide.

If they are those of obstruction

only, arising from the passage of
this part of the alimentary canal
being blocked up, the symptoms
of which are nausea, and the re-
jection of food when taken into
the stomach, intimating that the
parts are already full, and these
are unaccompanied by that gene-
-ral restlessness and anxiety, and
small quick pulse which is con-
-stantly attendant on Inflam-
-mation in these cases; if, then,
the symptoms are merely those of
obstruction, hurrying to the thora-

-tion, before other remedies have been tried, and taking a great deal of unnecessary responsibility on himself, is certainly wrong in any Surgeon. This, however, is not the usual fault; and particularly in country practice that responsibility is too often run away from.

But on the contrary, if Inflammation is present, the patient requires immediate relief, and no time must be lost before the operation is performed.

Tobacco in strong infusions has been

used in the form of a Clyster. This in some instances will produce a very considerable degree of relaxation over the whole system, and overcome spasms.

Cold applications are sometimes used for the purpose of diminishing the fullness of the parts, by causing the vessels to contract. This too, sometimes has a good effect, when the stricture is not so violent as to stop the circulation through the parts.

Fomentations are likewise some-

times used. These act by relaxing the parts, and are sometimes successful.

If all these attempts fail, an Operation must be had recourse to, or the patient will die. Now, there are some Operations, which a Surgeon may never be called upon to perform; others in which there is time for consideration and preparation; and others again, which he may be called upon to perform suddenly. And among the last class is the Operation for Strangu-

-lated Hernia; it therefore becomes very Surgeons to be thoroughly acquainted with all the varieties of it.

The operation for Bubonocele or Scrotal Hernia may be performed in two ways. When there is ground to believe that the intestine is not inflamed, the operation for simple obstruction is to be performed; which consists merely in cutting down upon and dividing the parts covering the obstruction, and the Intestine need not be exposed. No rule

however can be laid down: the Surgeon must judge of the propri-ety of it by the particular symp-toms attendant on the Case.
In these cases the ring can general-ly be felt, and the incision should be made down upon it. The ten-don should be punctured a lit-tle above it, and the probe passed through it downwards, so as to di-vide the tendon by cutting on the probe downwards. There will be no occasion for opening into the Hernial sac. Sometimes the Ten-

-mene is bound over the ring, so that there is a difficulty in getting it off. If so, a probe must be passed down between the ring and the finger Tumour, and a director or what is much better, the finger passed down, and the ring divided with a scalpel. If the constriction is formed by the ring, no further operation is necessary.

But where there is reason to suppose that Inflammation has already taken place where the symptoms are violent, and the tum-

-culated Intestine small, another mode becomes requisite, as ano-
-ther object is in view. It is necessa-
-ry that the state of the Intestine
should be examined, before it is re-
-turned into the cavity of the Ab-
-domen; and for this purpose the
sac is to be opened, and an Inci-
-sion made on the anterior part
of it, from whatever appears to be
the Abdominal ring to the bot
-tom of the Hernial sac. In this
part of the operation, an artery
is frequently divided, which should

undoubtedly be taken up before you
proceed any further.

The sac itself, which is as thin as
a piece of cambric, should be then
cut down upon with the greatest
caution. It is frequently covered by
lamina of cellular membrane,
which are to be very carefully di-
vided. The best method of doing
this, is, introducing a probe under
them, and separating them from
the sac.

If the Hernia is of long standing,
the cavity within the sac will be

large; and a fluid will be frequently found. But if this is not the case, you should bear in mind that the gut is immediately in contact with the inner surface of the sac, and particular caution is required to avoid wounding it. It should not be divided with a scalpel, but the fibres should be scratched with the point of a lancet, a probe introduced, following it with a director, which is to be cut down on. This being accomplished, a clear fluid usually rushes out; if this

happens, the sac is entirely di-
-vided.

When the gut is exposed, it must
be observed, whether it is entangled
with Omentum, and if so, the lat-
-ter must be pushed aside, in or-
-der to examine the state of the
Intestine; and whether it can be
returned without farther Operati-
-on.

The next thing is to find out the
Stricture, which may easily be
effected, by passing the finger
upwards with the back part of it

towards the Intestine, and if the Stric-
-ture is formed by any part of the
~~Intestine~~ ring, it may be divided
upwards with the point of a knife.
The finger is an infallible guide,
much preferable to any director;
it tells you exactly how far you ought
to go, and in this operation it is
of the greatest consequence that
nothing more should be done, than
is absolutely necessary.
If however this cannot be effected,
Potts Bistoury should be introdu-
-ced on the finger, and the Stricture

intestine, whatever it may be formed by.

Sometimes the Stricture will be found farther up, formed by the neck of the sac itself, or by the tendon of the Internal Oblique muscle.

The Intestine will often, as soon as the Stricture is removed, slip back quickly into the Cavity of the Abdomen, of which the Surgeon should be aware; as dangerous consequences would ensue from inattention to this circumstance, if the Intestine

has become mortified. It will sometimes occur, that as soon as the gut is liberated, the wind contained in the Intestines above the Hernia shall rush down and force through the opening with it a foot or two more of Intestine; and on every attempt to return it, the quantity shall increase. This is very liable to confuse the Operator; but he should not make use of Exertion to return them directly. Warm fomenting cloths should be applied to take off Spasm, and the parts

supported by the hand to prevent more Intestine from falling down; after a few minutes it may be easily returned. It has been recommended by some Surgeons, to puncture the Intestine with a needle or the point of a lancet, in order to let out any air which may be contained in them it; to this, however, there are very powerful objections.

It oftentimes happens, that in addition to the Intestine, there is a mass of Omentum, which is so thickened from Inflammation,

is to be incapable of being returned.
In this case, there is a necessity for
cutting it off, in doing which, we
must divide arteries, sometimes
large enough to bleed considerably,
particularly when returned into the
warm abdomen. In this bleeding
state it is very improper that the
Omentum should be returned, altho'
it has been attended, that Bandages
any part of it in a Ligature is
certain death, and that Haemor-
rhage from the Omentum never
ceases. This assertion goes too far.

it certainly occurs but seldom; that it never does, is saying more than the length of man's existence warrants. It has occurred within my own recollection; I have seen the vessels tied separately, and I have seen the whole together included in a ligature. When the connection is to be cut off, it should be spread out, in order to avoid cutting any Intestine which may be folded up in it. It has been recommended that the Stitched connection should be allowed to re-

main where it is, and stated that it will act as a cork, and prevent the return of the Intestine. But it is more liable to Inflammation than most of the parts; & when the wound inflames and suppurates, the Inflammation and Suppuration will extend over it, and perhaps to the Intestines, Stomach, &c. Having thus, as I supposed the ligatures, the Intestines should be returned; one being taken, that the ends of the ligatures be left out.

Now and then, the omentum adheres to the sac, when this is the case, it should be separated. If the intestine is very much distended, the faces rushing down from above, may produce mortification; and this sometimes very difficult to determine. When mortification has taken place, an artificial anus must be formed.

Of Scrotal Hernia

appears more frequently in men, so does femoral Hernia in women, both arising a little from predisposing

of structure. The female pelvis is naturally more capacious than that of the male, and has a larger space between Poupart's Ligament and the Pubis. The Ligaments of the female pelvis also undergo changes, which do not take place in the male, as during the state of pregnancy.

In femoral rupture, the Tumour is under Poupart's Ligament, in the upper part of the thigh, just over the femoral artery; and when strangulated is attended by the

some symptoms, which attend
the strangulated Rupture.
In this Hernia particularly, the
Surgeon is seldom called in, till
bad symptoms occur; as delica-
cy prevents the female from
mentioning it, till she is com-
pelled. As the Hernia in this
instance is more deep seated, and
the Surgeon has consequently
less use of his eyes, it is necessary
that the contents of the sac should
be always laid bare.
The stricture may be formed by

Poupart's Ligament below, by the fascia running under it, or by the neck of the Hernial sac. There, or any thing else which forms the stricture, whether it is the femoral ligament or fascia of the Thigh, ~~or any thing~~ must be divided, or else you may as well do nothing at all.

You may sometimes be able to return the Intestine, by dividing the smaller part of the Ligament only, and therefore this part should be first divided. If there is,

when this is done, divide an Obstruction, the whole of the Ligament must be cut through.

In some instances there is an artery, the division of which cannot be avoided. But it is the same case as an Aneurism; where an artery lies near a vein, the vein must be opened, though the artery runs a risk of being wounded. As the eye can be of no use in parts so circumscribed as these, the finger must be used in ascertaining what forms the Stricture.

It should be placed directly over the Stricture in the Intestine, as it is much better to cut down upon the director, and there is less chance of wounding the Intestine; besides, if you are near an artery, you may easily feel the pulsation, and endeavour to avoid wounding it. The Stricture should be divided fibre by fibre, till it is altogether removed, and the gut set at liberty.

Some rare instances have occurred, where the artery has made a band

just over the surface of the Hernial sac, then again, the finger is the surest guide; directed by this you cannot go wrong. I am quite myself the least uneasiness about the division of an artery.

It will sometimes happen, that a portion of the intestine is divided, and a second detains the gut; so that Surgeons, (being frequently in a hurry to finish the Operation) think sometimes they have returned the gut into the Cavity of the Abdomen, when they

have merely proceeded from one side
out of sight. This should be carefully
avoided, and the hand carried up
with the gut as far as the Stitches.

If sometimes, though rarely, occurs,
that the patient should have been
cured of a rupture, and upon an ex-
traordinary exertion it should re-
turn. Here a curious circumstance
appears; for the old sac is commonly
filled with water, and a se-
cond sac projects into it. This
appearance is apt to embarrass

any one not aware of such a circum-
stance. As soon, however, as the
Sac is punctured, and the flu-
id let out, the difficulty vanish-
es, and the Operation is similar
to any other. In most cases, if
only the Sheeture is divided, no
artery will be wounded, for the
descent of the gut will force a-
way, any which is naturally
there.

In Umbilical Hernia, the
Surgeon is frequently called in too
late, because the seat of the dis-

are frequently remains undiscovered, particularly in fat women.

It differs from the two last described, in having no Perineal Sac.

When the quantity of Intestine and Omentum protruded is small, they can be readily returned, but when there is a large quantity protruded, and Inflammation has come on, the Case is a very serious one.

The Operation is not at all difficult, but generally successful.

In performing it, you should have

-perfection than the division of the stricture. I would advise you never to attempt returning the Intes-tine, as this disease is almost always connected with some other. I was sent for to perform this Operation on a Lady, who was supposed to have Umbilical her-nia. On examining it I found that it could be returned, but that it gave her most violent pain and immediately protruded again. I told her husband that in my o-pinion no possible good could

arise from my performing the operation; but that, if he insisted on it, I would perform it against my better judgment. It was not performed. She continued to vomit-ing under symptoms of obstruc-tion; and at the end of three days I despaired of her life. At ~~the end of~~ this time she was ta-ken with a very violent fit of vomiting, and to my astonish-ment brought up three large Cherry-Stones. In this case, as the intestines were accustomed

to the Stomach no bad consequences
had ensued from it. But the
Thirty-Stones being unable to pass
a particular part, was the cause
of all the bad symptoms, supposed to have arisen from the
Emptines. I took great credit
to myself in this instance for
my mode of treatment, for the
perfectly recovered; whereas, had
I operated, in all probability I
should have killed her.

Many Kinds of Trusses have
been invented adapted to pass-

- tenta circumstances; but most
of them are very absurd. Those,
which best prevent the perfor-
tion of the Intestine, and keep
the sides of the ring closest
together, are the steel circular
ones.

Lecture the 6th

Hydrocele and Castration

Are with great propriety treated of here, as they are frequently much connected with the subject of the last Lecture, indeed, Hydrocele, affections of the Testicle, and Ruptures have been frequently mistaken for each other.

Hydrocele, (as the name implies) is a bag of water, collected in the Scrotum. The most common situation of it is in the Tunica Vaginalis Testis; although it is sometimes met with

in the Spermatic chord, when any portion of the Cavity formed by the Tunica Vaginalis communis has not been obliterated; which may proceed in some degree from natural actions. But besides these two, there is another species of Hydrocele, arising entirely from Disease; I mean that formed by Hydatids. These may be found in any situation; they are sometimes connected with the Testicle; sometimes in the posterior part of the Tunica Vaginalis, totally unconnected with it.

Hydrocele is a disease much more commonly met with in warm climates than in cold ones. It is very prevalent in the West Indies, and particularly in the Island of Barbadoes. I have seen known the progress of a Hydrocele arrested by removing from a warm climate into a cold one.

It is very common in early Infancy, but it generally disappears about the age of Puberty; so that I would never recommend any Operation before that time.

The most common cause of Hydrocele

is Hernia Humoralis. But it may also arise from an enlargement of the Testicle, which, when it subsides, leaves in the parts a disposition to secrete a fluid. When it arises from a natural secretion of the Surfaces of the Tunica Vaginalis Testis.

I think I may venture to say that we have no cure for Hydrocele. It does sometimes disappear spontaneously; and if it arises from any Irritation by removing the Cause, it may be removed also; for I have known a Hydrocele, arising from a Stricture in

the Urethra, disappear on the removal of the Stricture.

Cold and Stimulating applications have been used; and in some rare instances have appeared to succeed. I once saw a Hydrocele removed by the Unum Succini, but in four weeks it returned. So that these applications are of no benefit at all; for if they chance to succeed, they do nothing more than the palliative cure, which is a much simpler and easier process.

Hydrocele may be distinguished from

Hernia, by its not extending into the Cavity of the Abdomen, and by the mode of its increase; (the former commencing at the bottom of the Scrotum, and increasing upwards; while the latter takes the contrary course) and by the want of symptoms frequently attendant on Hernia. But when Hydrocele has once taken place, and the Surgeon has not the advantage of Information from his patient, the two diseases may be confounded. The general shape of a Hydrocele is pyramidal, with the

small portion upwards; when the coats are thin a fluctuation will be distinctly felt, and a candle or lamp held behind it will be more or less visible. The coats are on the contrary very sometimes very thick, and then it may put on two shapes: First, that of an hour-glass, large at the top and bottom, and small in the middle; if this is not attended to, the upper portion may be mistaken for a rupture, and the lower only for a Hydrocele. Secondly, it may be irregular in its

form, when it is liable to be mista-
-ken for diseased Testicle.

On the other hand, in one kind of rup-
-ture, namely, when a portion of gut
has been long down, and is in the
lower part of the Scrotum, it is no
uncommon thing for water to de-
-scend from the Cavity of the Ab-
-domen; and here the greatest Sur-
-geons have been mistaken as to
the Nature of the Disease. How
are they to be distinguished from
each other? There is no decisive mode.
In all these Cases of Hernia, when the

is water in the lower part of the Scrotum, the Testicle may be moved, and moved, on the outside of the sac, which can never be effected in Hydrocele.

As Hydrocele, so does diseased Testicle vary in shape; for it sometimes gradually enlarges, at the same time that it changes it substance. In this Case there is frequently the same fluctuation as in Hydrocele; and on this account every Surgeon is liable to mistake in his Opinion on as to this Disease.

When the disease increases, there are two modes of overcoming it; the first of which is, by emptying by letting out the water, and allowing it to collect again. This is termed the Operation for the Palliative cure, and when there is the least doubt as to the nature of the Disease, should be always had recourse to first. In this Operation much nicety is required.

Two Kinds of Instruments are in use for the performing of it, namely, the Lancet, and Trocar. The latter is the easiest to the Surgeon, and has on that

account been generally preferred; but the former is much the safest to the Patient; and as that should always be the first object in every operation, I have preferred on all occasions using the Lancet. Before the Operation is performed, it must be ascertained where the water can be most distinctly felt, which is commonly in the anterior part, and the Testicle in the Posterior part, except in an Hydatid, which may be in any situation.

For this purpose the Tumour should

be grasped sufficiently firmly with the left hand, so as to make that part, which contains the water, prominent; and after having examined where the fluctuation is most evident, the Lancet should be plunged in at that spot, like water issues out. A probe or director should be then introduced, to prevent the sides of the wound from collapsing. When the Operation is to be performed with a Lancet, I would advise the Surgeon to have a probe or director by his side; for

the least trouble in procuring them, will frequently make him move his left hand, so as to separate the orifice in the skin from that in the Tunica Vaginalis Testis. In consequence of this, the water will be effused into the cellular membrane, which is an awkward circumstance, though it will be attended only with temporary inconvenience, as it will be absorbed.

When the Trocar is used, it is to be plunged into the cavity in the same manner as in the Opera-

-tion for the radical cure.

Instances have happened, where a poultry Testicle has been mista-ken for a Hydrocele, and a Lancet or Trocar plunged into it. Indeed this mistake has occurred to every Surgeon of eminence in this Coun-try. In one instance in which the mistake happened to myself, I had the advantage in using the Lancet, for in time the wound healed entirely, and no bad con-sequences ensued from it. But where the Operation is performed

with a Trochar, it generally happens that some vessels are wounded, and a Hæmorrhage comes on, which renders it necessary that the Testicle should be immediately removed.

No exercise is to be taken, or exertion used, after the Operation, for Inflammation frequently comes on, if the Patient is not kept perfectly still, and a radical cure unintentionally takes place. I am generally in the habit of relating a case, in illustration of this.

An elderly gentleman had a Hydrocele, and the Operation for the palliative cure was performed on him. He went to his Countryhouse immediately after the Operation, was seized in the Evening with violent Pains in his Loins and Testicle; and the next morning the Hydrocele was as large as ever. He therefore came back to me, and told me that the same fluid was returned again in four and twenty hours. Good, Sir, it was not the same fluid; but that which was

let out immediately, he would probably obtain a radical cure. This was accordingly done by the Surgeon who had performed the first Operation. The Gentleman brought me a teacup full of the fluid, which was let out, and said that I might now see that my opinion was wrong, for that it was exactly same as the other. They certainly did at first appear alike; but upon placing the two fluids in a spoon over the candle, the first evaporated to dryness; and the last Co-

-gulated. It was serum or Coagulable Lymph thrown out by the Inflam-med vessels. The case turned out as I had predicted; for the Inflamma-tion, which had been brought on, ter-minated in adhesion, and thus a ra-dical cure was effected.

The radical cure is to be performed, when it is wished entirely to get rid of the Disease. The best and easiest mode of exciting the Inflammation requisite for this, is by injecting into the Scrotum equal parts of red wine and water. There are, however, some

-ever; where from indolence in the parts, this shall fail; when this, therefore, is suspected, some acid fa-rinaceous powder should be intro-duced. There are many other modes of exciting Inflammation, but all of them liable to failure. Care must be taken, lest only partial adhe-sions take place.

These are the more common cases and modes of treating them; but there are cases, where it is difficult to ascertain the Nature of the Disease. Commonly the Testicle

is felt in the posterior part of the Hydrocele; but if it is in the anterior part, the disease is within the Tunica Vaginalis Testis, & some inflammation has taken place, and consequently no palliative cure can be performed, for the inflammation will produce the radical cure.

When there is a confused feel, or any thing else the common way, it will be prudent to lay open the cavity, in preference to Injections, as this will be attended with the same symptoms.

Hydatids, as was before stated, some-
-times form this disease; and then,
if the latter Operation is performed,
no benefit can arise from it, for as
fast as they increase, the disease
returns. Whereas, if the Cavity of the
Tunica Vaginalis Testis is laid open,
they may be all removed.
When this is to be done, an in-
-cision should be made to some
extent along the Tunica Vagi-
-nalis Testis, and then an aperture
made in it sufficiently large to
introduce the finger, and prevent

the orifice from collapsing. The part is then to be filled up with flour or lint.

It is unnecessary to say any thing about the cure of this disease by Caustic, the Seton, or the Tent; for these Operations are now entirely laid aside. Having said so much of Hydrocele, we will now proceed to Castration, or Extirpation of the Testicle.

Disease of the Testicle may be produced by a thousand various causes,

as that gland is capable of being
acted on by any external violence,
as well as by Specifics and other
Diseases. When the Testicle loses
its natural State, it is to be regar-
ded merely as a common Tumour.
Two causes only of Disease in it
will be principally treated of here.
The first of these is, when the
Testicle Threatens Cancer; and this
may be suspected, whenever it
becomes particularly hard in its
substance, and heavier than is
usual. The very idea of Cancer

is enough to alarm one, and make one willing to submit to any Operation. If the feet of the Patient give reason to suspect the beginning of a mortification, not a moment is to be lost in the Extirpation of it, for when the whole is contaminated, it is too late. This is not however, by any means the most common Disease of the Testicle.

The second, is that it is liable to become scirrhous and may continue in this state it may remain for years, but when it has increased to a cer-

tain size, the skin shall very frequently give way, and an ulcer form, from which a fungus is thrown out. This I consider as incapable of cure; and there are two reasons for performing the operation here, which none can be advanced against it. The first is, that it is of no use as a testicle; and on that account it is at the option of the patient to have it, or not. The second is, that it is liable to unmanageable violent Haemorrhages, which may compell the Surgeon

to operate at the moment.

In ulcerated Testicle, its internal structure often a time becomes exposed.

If the Testicle is Scrophulous, the Operation should be performed, before the Disease has extended into the Abdomen. But the disease of the Spermatic Chord forms no objection to the Operation, in which respect it is quite the contrary of Cancer.

When the Testicle is surrounded by water, the pressure and tension

being taken away, it will sometimes
recur itself. If, therefore, any fluc-
tuation is visible, I shall be induc-
-ed at any rate to remove that fluid,
which caused it, and in one instance
I found the good effects resulting from
this practice.

A Gentleman had what was believed
to be a diseased Testicle. Mercury
had been tried without any benefit
being derived from it, and his Sur-
geons had determined on the Re-
-moval of it. I was consulted, and
refused to give my opinion as to the

nature of the disease, till I had
let out some fluid, which I thought
I perceived on the anterior part of
the Tumour. I made a puncture
through that part with a Lancet,
and to my astonishment, the whole
turned out to be a Hydrocele, with
the coats of the Tunica Vaginalis
Testis extremely thickened, except that
that particular spot. I told him to
go to bed; but he thought there
could be no harm in going three
doors off, to give a pretty woman of
his acquaintance an Opera ticket,

which he had promised her, in person. Inflammation came on, and a radical cure was the consequence.

How is the Operation of Castration to be performed? It has been recommended to cut down on the Chord and pass a Ligature round it, before the Testicle is laid bare; and the reason given for it is, that the patient does not feel the remainder of the Operation. But the Operator's first consideration is to be, which mode will lead him the least risk; and as cases have been

known of the Chord being tied, and after entering into the Scrotum, a Rupture being found, that circumstance forms sufficient reason for laying this Operation aside.

An incision should be made from the Chord to the lower part of the Scrotum; the Testicle should be dissected out, and detached all round; and the Operator should then observe whether the Chord is diseased, or not natural. In one case I found some water in part of the Chord, which I let out, and proceeded with the

Operation. As soon, therefore, as the Testicle is disengaged, the Chord should be examined, and the part fixed on, at which it is to be tied.

The Chord is formed of two parts; the Spermatic artery and the returning veins forming one part, and the Vas Deferens the other. It has been recommended to take up the Artery alone; but this artery always retracts so much, that the Ligature is liable to slip off. In disease, these parts will become so thickened, that one Li-

gation will be frequently found insufficient completely to deaden them, which is indispensably necessary. I always use a double Ligature, which is passed between the Vas Deferens, & the remainder of the Chord; and the former enclosed in one part of it; the latter in the other. These, if properly applied, will generally separate the parts in eight or nine days.

The Symptoms after the Operation vary much; but in pulpy and scrofulous Testicle they are very trifling. The severest symptoms

occur from the Ligatures not being
sufficiently tight.

In cutting into the Scrotum, if the
Skin is perfectly sound, one incision
is enough; but if the Skin adhares
to the Testicle, a Thin is the least
risk of contamination, every part,
having the appearance of Disease,
must be removed. In bringing the
edges of the wound together, it will
sometimes be proper to use adhe-
sive Plaister, sometimes Sutures,
or compresses.

When the Chord is tied, before the

Testicle is laid bare, two ill conse-
-quences are apt to arise from it.
First, the artery is not sufficiently
compressed, and then is the great-
-est difficulty in stopping the
Hemorrhage. Secondly, the mass
included in the Ligature is not
frequently entirely deadened, and the
vessels in the centre keeping up
a communication with the sur-
-rounding parts, granulations are
formed which endow the Ligature,
and prevent it coming away. White
arsenic and Sulphuric acid cause

these granulations to slough off,
and then the Ligature may be re-
-moved, but by this, the cure is
much protracted.

As the Spermatic Chord is compo-
-sed of such different parts, the Li-
-gature should be made with great
accuracy, and drawn very tight.

When the Chord is at all turned, I
would go a little further, and after
having divided the Chord I suffered
the fluid to escape, again tighten it.

Lecture the 7th

Popliteal Aneurisms.

An Aneurism is a preternatural dilatation of the coats of an Artery in consequence of disease. It is confined to a small part of the of the Artery, and takes place on that side which is most exposed to the current of Blood.

Till lately, Aneurism has been considered to proceed from nothing more than simple weakness of the coats of an Artery;

and Haller made many experiments on living animals to prove this, which gained sufficient credit at the time. But I have repeated them with very different results, having found that simple weakness of the coats of an Artery will not produce Aneurism; and Mr Hunter, from many experiments, which he made, fully ascertained, that it proceed altogether from Disease. Among the rest, he laid bare the femoral artery of a Dog, and removed the outer coat.

the Dog recovered, and no traces of
suppuration were visible.

It was concluded, that if the sup-
port of the surrounding parts
was taken away from an Artery,
an Aneurism would be the con-
sequence. But upon tying the
the femoral artery of a Dog, no
dilatation took place, and the
wound healed by the first intention
tion. The healing of the wound
by the first intention was ob-
jected to in this Experiment;
on which account, the same

Operation was performed on another Dog, and the wound drawn down to the bottom; no dilatation took place here either. In both these instances, when the Artery was inspected, the dimensions were the same as those of the same Artery in a natural state. In examining the internal coat of an artery, in which Aneurismal artery has been formed, it is found more opaque than is natural, and sometimes ossification has taken place. It may

Therefore with reason be inferred,
that Aneurism is produced by a
diseased alteration in the coats
of an artery, giving them a dispo-
-sition to form bone, similar
to what is produced by old age;
for which reason we find it much
more common in elderly than
in young people.

Aneurism is most common when
the impulse of the heart is great-
-est: consequently it is most fre-
-quently met with in the arch
of the Aorta, the semilunar valve

of which aged is peculiarly favorable to the formation of it.

Next to the Aorta, the Popliteal artery is most subject to this disease, because, when the knee is bent it is placed under the same circumstances, the bow part of it forming a right angle with the upper, and affording the same impediment to the circulation of the blood through it. In other parts of the body it is more rare.

This species of Aneurism is most

common is post boys, hackney-
coachmen, and those whose knees
are very much in the bent posi-
tion.

This being observed, it was natu-
ral to suppose that the artery
was stretched in the same man-
ner as the bladder is dilated,
when a quantity of urine is
injected into it, and cannot
find an outlet

Having said so much of the
Nature of this disease, I shall
now have it brought into pre-

grasp, and mention what would be its terminations, were nothing to be done for the cure of it.

The moment an artery at any particular spot has admitted of dilatation beyond its natural size, the impetus of the blood passing through it, gradually increases it, not in a right angle with its course, but in a diagonal line, extending partly outwards, and partly in the direction of its course. As soon as the sac is once formed, some of the blood,

which would otherwise have been
propelled through the artery, is
thrown into it, attaches to its sides,
and coagulates in layers, which
differ in density and colour, the
layers nearest the diseased coats
being thickest and darkest, and
the others proportionably so.
This coagulation increasing, pres-
ses on the surrounding parts,
and generally does this in a
direction for finding its way
to the surface of the body.
If no remedy is applied, the tu-

mour forms by the Aneurism increases in size, the natural surrounding parts are absorbed to make way for it, which is a very curious fact. The skin being pressed on by it, ulceration and sloughing are produced, and upon the separation of the sloughs, the blood escapes externally, and the patient immediately dies.

4th. This takes place, when the disease is so situated, that no operation can be performed

for the relief of the patient. I once saw a case, where the ribs themselves were absorbed to make way for an Aneurism of the Aorta.

This is the natural progress and termination of the disease; but there is a very curious mode by which nature sometimes effects a cure, the parts recovering themselves, when the disease has arrived at the last extremity.

This is more common in Aneurism of the femoral artery than

same effect might be produced
by pressure on the diseased artery
so as to prevent the circulation of
the blood through it. This may
appear very plausible in theory,
but in practice it will not be
found to answer, as it is impos-
sible to make any degree of
pressure on the artery without
compressing the nerve at the
same time, and this would be
productive of pain so excruci-
ating, as to be wholly unsup-
portable. Though I have known

one or two patients, who have been able to endure it for a quarter of an hour, yet they have preferred even death itself, to the pain which the continuation of the pressure produces. An instrument has been invented for the purpose of compressing the artery alone, which is nothing more than a hoop going round the thigh, and a screw pressing on one particular part, so placed as to compress a piece of cork, cut to the size of the Tumour,

of any other. When the Tumour has approached very near to the skin, and the coagulated blood has extended itself into the cellular membrane and muscles, no pulsation shall any longer be felt there, the blood shall become hard and coagulated through the whole course of the vessel leading to the aneurismal sac, and the parts shall entirely recover themselves. In one or two cases of this kind, where I have expected death on

ry hour, the patients have re-
covered in this way: it is there-
fore right to bear this natu-
ral mode of cure in mind. But
if the situation of the disease be
such, that it will admit of an
operation being performed with
safety, we are not to place any
dependance on so precarious a
chance for the cure.

Spontaneous has been some-
times cured by a ligature of the
side of an artery, it has been sug-
gested by some Surgeons, that the

and laid over it. But it appears to me impossible to compress one effectually, without compressing the other at the same time, and I therefore think the Instrument of little or no use.

The only sure remedy therefore is to obliterate the Artery above the sac. The Operation, which was performed in order to effect this obliteration in the Popliteal artery, was to cut down into the sac, scoop out its contents, and place a ligature above and below it, just

as you would on a wounded artery.
This however was seldom successful,
as the artery was commonly dis-
eased in its structure so near the
sac as where the ligatures were
tied: so that when suppuration
came on, and they were taken a-
way, the sides of the artery had
not united, and the patient in-
stantly died from the Hæ-
morrhage.

This method has indeed some-
times, though rarely, been suc-
cessful, but it generally fails; and

I have endeavoured to explain the
cause of its failure. I therefore think
it very important to operate as
near the seat of the Disease.

Instances have not been
wanting of an operation being
performed in femoral Aneurism.
In a case of this kind which was
under my care at St. George's
Hospital, as great a space was
left between the Tumour and
Poupart's Ligament for the
Operation; but I was led to
believe that the artery was dis-

case above the sac, and I there-
-fore declined performing so ha-
-zardous a one. In this instance
pressure was tried, after which
the patient left the Hospital,
and fell a sacrifice to the
Disease.

A Surgeon of considerable emi-
-nence in this Town has ope-
-rated for this disease in three
different instances, the two
first of which failed, but the
last succeeded. This I think
sufficient to warrant the o-

-peration, the chance in favour of it being one to two; though I should always explain to the patient the hazard attending it, and that it was the only remaining chance for his Life.

Mr. Hunter formerly performed the Operation for Popliteal Aneurism according to the old mode; but having lost four or five patients successively, he declined performing it any more. Upon farther investigation of these cases he found that in all of them

the artery had lost its natural Structure; which lead him to propose taking it up at a distance from the Aneurismal sac.
He therefore performed the present Operation at St. Georges Hospital, passing three different ligatures round the Artery, whereby he thought to lessen the chance of Hæmorrhage. This succeeded.
As soon as the artery was tied, the Ædematous swelling of the Leg gradually subsided, and in time the parts entirely recovered themselves;

but the Ligatures cut a long time
in coming away.

With a view to the improvement of
this mode, the next time he had oc-
casion to perform it, he put only
two Ligatures on the Artery, and
dressed the wound in such a man-
ner as to admit of the Ligatures
being taken away. This case heal-
ed out more than before, for a
suppuration and ulceration of
the Sutures. Mortification came on, &
and the patient died.

From observing this, he was indu-

ed to by a more simple method,
namely by applying only one li-
gature to the artery; and one,
I believe, is as good as two by.
The Surgeon applied a simple li-
gature round the artery, bringing
the ends out from the wound, and
healing the remainder of it by the
first intention. The cavity, in which
the Ligatures were contained, acted
as a syphon to convey out any mat-
ter which might be formed, and
after the Ligature came away,
was healed as a common fistula

red wound.

Finding that this practice succeeded so well, he continued it; and since his Death the most eminent Surgeons have followed it. If the artery, where the Ligature is applied, is in a state of disease, there is no chance of the patients recovery; but if not, it is almost always successful. It has been asserted, that if the artery be divided and allowed to retract, a great deal might be gained; but I believe this assertion to

be ~~should~~ understood.

I will now explain the Operation, by performing it on the dead subject. In this purpose, females are much more than males, as they have commonly more fat about the Thighs.

In performing this Operation, the Surgeon must be governed entirely by his Anatomical knowledge. You are to bear in mind that the Artery lies directly under the middle of the Sartorius Muscle. The direc-

-tion, therefore, of the Muscle
being discovered, in the first in-
-cision (which is to be made thro'
the skin and cellular membrane)
its fibres are to be cut down on,
about the middle of the Thigh.
You will recollect, that in the
living body the breadth of this
muscle is nearly twice as great
as in the dead subject. This
done, the Artery may be found
between the Sartorius and the
Rectus Cruris; but this is not
the best method, as a quantity of

Abdominal membrane must be cut through to get at it. Whereas, if it is sought for between the Sartorius and Triceps, it will be found at the bottom of a natural space, and there is no chance of cutting through any branches. I have seen a Surgeon, who had endeavoured to cut down on the artery above the Sartorius, obliged to go to the other side between it and the Triceps, which circumstance it will be proper for you to be acquainted with.

The Patient should be placed
in such a position as to have
his knee a little bent, and his
heel turned in towards the calf
of his other Leg. The first inci-
sion should be made rather near
to the edge of the Sartorius next
to the Triceps than that next
the Rectus Cruris.

The loose edge of the Muscle being
raised, when you have divided
between it and the Triceps, the
Artery will be immediately found
by its pulsation. Upon dissecting

down to the artery. Then should
be a discharge from any vessel
it should be secured, that you may
see more clearly to finish the ope-
ration.

After dissecting away the parts
as neatly as possible, there be-
comes, resembling strings will be
brought into view, which are the
artery, vein, and nerve. The nerve
lies upon the artery, which lies be-
tween on the outside of and below
the vein. A little of these vessels
are to be laid bare as possible, and

care must be taken not to wound the Artery and Nerve, and Vein. The next thing to be done is to pass something under the Artery; for which purpose the needle answers much the best. The Nerve should therefore be raised, and at the same time the needle passed between the Artery and Vein, beginning at the side of the Thigh next the Triceps.

When the Ligature has been passed under the Artery, it should be raised, to stop the Circulation;

and if it is taken it should be, the pulsation in the Aneurismal Sac will cease; if it does not, you are sure that you are wrong.

Having got thus far in the Operation, the remaining part is very simple. The Ligature is to be tied very tight, or it will not sufficiently promote the Suppuration and Division of the Artery, and come away soon enough. If this happens, the Granulations issuing will soon stretch the Ligature, and render

it difficult to be brought away at all. The ends of the Ligature should be left hanging out of the wound, and its sides brought together by strips of adhesive plaister, healing them as much as possible by the first intention.

No attempt should be made to remove the Ligature, till after the Tenth Day. But from that time I would advise that it should be pulled a little every day, gradually increasing the force, and

never allowing it to remain lon-
-ger than the fourteenth or
fifteenth Day. If it be not
removed by this time, it may
be productive of bad Consequen-
-ces, as it is a large body, and
would be a continual source of
Irritation; abscess would form;
the artery perhaps would suppu-
rate; and even at so late a peri-
-od a fatal Hæmorrhage might
be produced.

I was not long since called in to
by a Surgeon, who had suffered

the Ligature after this Opera-
-tion to remain in six Months.
I asked him if he had tied it very
tight, and, being answered in the
affirmative, I desired him to pull
at it, tile it came away, which
he did; and after considerable force
had been used in disentangling it
from the Granulations, succeed-
-ed in his attempts.
Much has been said as to the
mode in which the Leg is to
be nourished after this Opera-
-tion; but that Question has been

long since decided by Experience.
The tumour never entirely goes a-
-way, but decreases in size so much,
as not to cause any inconvenience.
It will be prudent to place a
loose Tourniquet on the groin,
in case the Artery should be ac-
-cidentally divided, or wounded.
For this mode of Operating
for Popliteal Aneurism, we are,
(as I have before stated) indebted
to Mr. John Hunter. It is per-
-formed without much pain to
the patient, and as the nerves have

of Surgery, so that it may unavoidably
be reckoned among the greatest im-
provements of modern Surgery.

Finis

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