**The surgical treatment of Idiocy, with an Abstract**

**Publication/Creation**

c. 1895

**Persistent URL**

https://wellcomecollection.org/works/fshpxc8t



wellcome collection

Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
https://wellcomecollection.org

Abstract of Paper on
The Surgical Treatment of Idiocy
by G. E. Shuttleworth B.A. M.D &c
Late Med. Sup. Royal Albert Asylum.

—

Much attention has been drawn to subject of craniectomy in connection with microcephalic idiocy, both in professional & lay press; & as exaggerated notions of its efficacy in relieving cases of arrested brain development have been formed, it would be well to review the experience of the last few years. Originally practised in 1876 by Fuller of Montreal, it is only since 1892 it has been extensively practised in Europe, the names of Lannelongue in France, Keen in America, & Victor Horsley in this Country being best known in connection with it. The general result seems to be that with the exception of a few rare cases of microcephalus due to premature synostosis — & these are the exception & not the rule, the skull being moulded to the brain, & not the brain to the skull — the operation was not of permanent benefit in promoting brain-development, & Bourneville had recently shown that so far from the cranial capacity having been increased by the procedure in the long run, it was actually diminished in consequence of the thrusting out of new bone in exuberance to fill up the gaps made by the surgeon. There was indeed but little evidence of premature synostosis in the skulls of microcephalic idiots for Prof. Humphry had examined 19 of various ages & found there was nothing ~~no evidence~~ in favour of the view that in such cases the brain was compressed by its

bony envelope; & in an idiot of 29 the sutures were still open. It was now stated that the removal of bone in microcephalic cases promoted brain development by a loss of alterative action on the cerebral circulation

Record of Cases of Craniectomy
Carl Beck
Nov. 1894
47 cases.

Lannelongues mortality 46 c
of others 23.

Wylie says of N.L.
Improvt most marked & Coud.

Shoulders broke
B. in 1st Insert 24-92.

Spastic cond. subsd
Testicle descended

Beck says. If the brain be found by Obers
need confine of blood, & new infusion of blood
occurs, & if this process be aided by Pedagogical
method then the child improves & shows
improving
Lannelongue finds down following indics for Op
1 Primitive lesions of brain
2 Secondary " Entire catarrh, Chronic
3 Traumatic during birth
4 Congl affects due to infra uterine Pressure.
5 Meningeal hemorrhages
6 Syphilitic infiltrations
7 Pathological changes from bad cicatrices in brain
8 Infantile or Spl Sclerosis

# The Surgical Treatment of Idiocy

by G. E. Shuttleworth B.A. M.D &c
late Med. Supt. Royal Albert Asylum for
Idiots & Imbeciles of the Northern Counties,
Lancaster (Lancaster House, Richmond Hill)

---

The fact that much popular attention has of late years been drawn to the subject of operations undertaken for the relief of Idiocy & other mental deficiencies of Child-life must be my apology for bringing before this Section observations resting not solely upon my own experience but largely upon that of others. The operation of Craniectomy or (as some prefer to call it) linear craniotomy especially having been exploited under sensational headings, such as "The Creation of a Mind" &c &c in ~~largely~~ extensively read lay periodicals (e.g. Harper's Magazine, "The Strand, The Nineteenth Century & Science Siftings") it behoves us as scientific men to weigh & measure the evidence on the strength of which the unfortunate parents of mentally deficient Children have been encouraged to take somewhat sanguine views of the resources of Cranial Surgery. Again & again have anxious mothers enquired of me whether there would not be a better chance for brain development in such cases "were a piece of bone to be taken out of the skull", & it seems important consequently to have a just estimate of what, for brevity's sake, I have designated "The Surgical Treatment of Idiocy"

By way of introduction to the subject I quote

The following from a ~~well written~~ article
by ~~[illegible]~~ on Modern Surgery in
~~[illegible]~~ Which
was issued in 1891 in Harper's Magazine
& was selected, copied in one Mississippi

Turning now from the popular to the more scientific side of the subject, let us now follow briefly the history of the operation of craniectomy. First performed by D. Tullis of Montreal as long ago as 1878 on an idiot of two, with it is said favourable result, we hear no more of the operation until 1890, in which year cases were reported by Keen of Philadelphia, & by Lannelongue of Paris. In 1891 Victor Horsley reported two cases to the Annual Meeting of this Assoc^n at Bournemouth; & since that date the operation has been repeatedly practised in this Country, in France & in America: but much, however, in Germany.

Originally the view held was that microcephalus craniectomy depended upon premature cranial synostosis, & to relieve the impinged brain openings in the skull, varying in form & position (linear craniectomy, or craniectomie "a lambeaux" or bone made by the surgeon - In spite of the occasional occurrence of a history of prematurely closed fontanelles, the observations of Anatomists lend little support to ~~the~~ a view, ~~of~~ regarding the fact being that the skull is as a rule moulded to the brain, not the brain to the skull. Prof Sir Geo. Humphrey of Cambridge has examined 19 specimens of idiot skulls, & states that there is nothing to suggest that the deficiency in the development of the skull was the leading feature in the deformity, & that the smallness of the bony cerebral envelope exerted a compressing or dwarfing influence upon the brain" Lancet Feb. 16. 95 p. 423.

In the case of a ~~cast~~ microcephalic idiot ~~who~~ formerly under my care at the Royal Albert Asylum Lancaster / whose brain was carefully ~~investigated~~ examined by Prof. Cunningham of Dublin there was not, at the age of 29½ years, complete synostosis of sutures, & in fact, & in several other cases of microcephalus which have been thoroughly investigated, the convolutions of the brain, such as they are, give no indication of compression, but are free, outstanding and separated by well marked sulci. The advocates of ~~the operation~~ craniectomy have indeed been driven to abandon the theory of premature synostosis as the rationale of the operation: it is now alleged, so far as I can understand, that the operation excites a sort of "alterative" effect upon the brain! Keen of Philadelphia says (in the course of an address to the Assoc. of Med. Officers of Imbecile for Feeble minded in America) "when we have an expanding brain & a resisting skull of about equal & reciprocal force, we have the normal condition in children; but if we have feeble children with poorly-nourished & feebly growing brains, in the majority of cases the feebly growing brain cannot overcome the resistance that the normal brain can". Probably some argument of a similar kind was used by the practitioners of trepanning in prehistoric times, for the Baron de Baye has discovered in the chalk of the Marne sepulchres containing many skulls perforated with elliptical openings, which there is reason to believe were cut in childhood by means of a flint scraper. History unfortunately

does not tell us whether the brain illumination of the area of the skull had gone as far as the practice now of letting in daylight! again in consequence of [illegible]

Letts, however, criticises the modern revival of infantile trepanning in view of experience of results. In 1891, being anxious to form an opinion on the subject I visited M. Lannelongue's clinique at the Hôpital Trousseau. There were unfortunately at this period of my visit no cases in hospital in which the operation had been performed, but M. Lannelongue informed me that of 25 cases operated on, only one had died, & that about 2/3 of the survivors were "manifestly ameliorated". I learn however that this "manifest amelioration" has not been maintained, for after 6 years one hears nothing more of these cases. Bourneville Physician to the Bicêtre, (who refers to the subject [of which he has ample opportunities for observation]) in a clinical lecture - "Generally speaking" it seems to me that the Surgeons have little knowledge about idiocy & its causes & forms. We find as reasons for undertaking such an operation as cranial trephining the following: - "the condition of the child is so deplorable that there is hardly any risk to undertake any operation at all which gives a chance for relief" (Voisin), whilst another remarks "as far as I think, it is a very lucky invention, for if we cannot help such children it is better for them to die than to live such a miserable existence". These are

Surgical Orion "fin de siecle", & we mention them only to condemn them. The medicine men were taught that the mission to cure, to ameliorate or to spare the sick that are entrusted to us & not to assume the functions of an executioner.

In the last published Volume of "Recherches sur l'Epilepsie, l'Hystérie, l'Idiotie &c." M. Bourneville tabulates 82 cases of craniectomy, of these 14 had been fatal, & in 31 a greater or less degree of "amelioration" had been recorded. reported

In too many cases the report of "amelioration" is made within a few months of the operation, & to use the words of the writer of an article in Cassell's Yearbook for 1895 "it appears that as a rule a certain amount of improvement results immediately after the operation, but this is not maintained, & it is quite possible that the final result of the operation is a diminution & not an enlargement in the size of the cranial cavity, owing to the fact that great sclerosis & contraction takes place along the line of the wounds". Indeed Bourneville has demonstrated in 3 autopsies of craniectomised idiots that no expansion of the cavity of the cranium ultimately takes place but on the contrary it is encroached upon by excess of bony matter thrown out to repair the breaches. He maintains that this Surgical method of treating idiocy is of little, if any, value, & that whatever good results have been observed soon after the operation are rather the result of the increased care & attention bestowed upon the child than of any expansion of brain. So far as my

from Experience goes (I have had three craniectomies) patients under my observ.n I am quite in accord with Bourneville -

Of the three Patients referred to, the after-history of two will be given by my successor at the Royal Albert Asylum, Dr. Telford Smith. I need not consequently further refer to them than to say that one (Nth), operated on in 1891 & again in 1893 by Mr. Victor Horsley has not fulfilled the favourable anticipations originally formed.

Dr. Telford Smith recently reported that "the only noticeable improvement is that the boy has almost given up the habit of knocking his own head, & that he is slightly less restless. There is no attempt at articulation, & since the last operation his parents do not think there is any change in him." With regard to a third case, the child of a medical man, cranio-stenosis in 1891, at 4 operations by the same Surgeon, Mr. Lunn, the following writes to me this week "I cannot say that he has been in any way benefited by the operation. The small amount of mental development he had prior to that time was diminished by the operation, & he has not yet, after 3 years, regained it. There has been some degree of mental development, but not more than probably would have come had there been no operation." It is only fair to add that Mr. Victor Horsley in writing to me of cranio-stenosis in microcephalic & other cases & the notes of which he has kindly permitted me to see, a certain amount of mental & physical improvement is recorded —

That was I suppose to make more effectual the merely Surgical Treatment

In his admirable book on Brain Surgery
Dr Allen Starr devotes a chapter to the
consideration of Trephining for Imbecility
due to Microcephalus; but he divides this
latter into 3 clinical types. The first group
contains cases of hemiplegia with or without
athetosis: the second, cases of mental defects
of various grades: the third cases of sensory
defect of various types. This is no doubt an
excellent division of cases appropriate for
operative interference, but it seems to me that
the hemiplegic cases do not properly fall
under the head of Microcephalus. My own
view is that the deformation of Microcephalus is properly limited
to a very striking & quite characteristic type
of Idiocy. Whilst denoting smallness of
head, it is not only in size but also in form that
microcephalic cases
it is typical: these always a narrow
receding forehead, a somewhat pointed
vertex & a flat occiput. I do not myself
consider the limit of 17 inches in circumference (and Down's figure)
as essential to microcephalus; but when
the measurement exceeds this, & the form of
the head is quite other than those described,
it is not fair to describe the case as one of
Microcephalus. Craniectomy may indeed be
useful in relieving pressure resulting from
inflammatory products within the cranium,
but in such case it is not properly described
as "Microcephalus", treated by linear craniectomy"

The group, first adverted to, of cases of
hemiplegia with or without athetosis is
probably one promising better results from
craniectomy than those of pure Microc-
-ephalus. Resulting as they frequently do

the brain in children from hæmorrhage during parturition compressing the motor centres & interfering not only with movement but with speech. & so giving rise to the semblance of idiocy although the intelligence may in truth not be much impaired. There is no doubt that the removal of a clot, or of the adventitious tissue (false membrane) resulting therefrom may relieve pressure symptoms, & so produce a permanent amelioration both physical & mental. In another Section, 2 cases of this kind under the care of Mr. Bevor & Mr. Horsley in which the results were very favourable are to be described. Similarly in cases of traumatic or localised Epilepsy there is undoubted encouragement to Operate supposing that the underlying organic cortical changes have not proceeded too far. But in giving a prognosis the risks of subsequent irritation by cicatricial tissue must be borne in mind. In hydrocephalus also there is a fair prospect of relief to pressure & consequent improvement by means of Keen's method of Trephining followed by drainage. The following case, chronicled by Broca in the Revue de Chirurgie for January 1891, may be taken as typical. "A boy 14 years of age had suffered from hydrocephalus & was imbecile, & had contracture of the right arm, following a series of Convulsions. The Trephining was done at the point indicated by Keen, 3 centimetres above

& 3 centimetres behind the left auditory meatus. It was noticed that urine was not pulsating from the dura or of the brain when this was exposed. Broca punctured the ventricle with a trocar & cannula & evacuated 60 grammes of fluid; he introduced a drainage tube through the cannula & allowed it to drain into the gauze dressings which were changed every day or two. Pulsation returned in the brain after the operation. On the sixteenth day a very marked improvement was noticed in the child, the contraction in the right arm having disappeared. The amount of fluid drained away became progressively less, & on the 50th day after the operation the wound had entirely healed, & the child was discharged from the hospital very much better physically & mentally." In the class of mental deficiency resulting from hypertrophy of the brain with pressure symptoms the operation of craniectomy may legitimately be tried.

In the Lancet of July 27 there is an interesting report of a case of Jacksonian Epilepsy with aphasia, ~~hemiplegia~~ intellectual impairment, & partial hemiplegia, treated by trephining by Mr W. Anderson of St Thomas' Hospital. The patient, a boy of 13, was the subject of ~~inherited~~ syphilis, & through hyperpyrexia of several months' duration, with Epileptic & frontal

† Starr's Brain Surgery p. 202

age of 10 years. A circle of bone, an inch & a half in diameter, was removed from the os frontis in front of the lower end of the fissure of Rolando, on the left side, exposing the membrane over the convolutions of Broca & the lower part of the precentral, & second frontal gyri. On incising these membranes the cerebral pulsations, at first indistinct, quickly assumed their natural character. When discharged fr. the hospital 3 months after the Operation, he is reported to have become free from fits & from paralysis the symptoms. Though his intelligence had not greatly improved with the exception of mental instability having been relieved. Mr. Anderson in his remarks upon the case observes that "it still remains to be seen whether a second Operation over the precentral & frontal gyri may not be advisable with a view to influence further the still defective intellectual functions". My own experience of cases of imbecility with unclosed fontanelles has shown cases of enlargement, & sclerosis thickening of arterial coats, & atrophied convolutions, & a priori one would not be inclined to expect operative procedures to be very successful in this class of cases.

To sum up the evidence, we may say that Craniectomy is but rarely of permanent benefit in cases of the ordinary congenital microcephalus resulting from cerebral agenesis, but possibly it may good in the rare cases

† It is like a modern Cretin, only a little less thoughtful & more active

of generalised hypertrophy resulting from
chronic hyperplasia - In cases due to
pressure from (Specific cases apparently)
Granuloma Operations for its relief are of course
indicated, as they are in cases of
mental defect with hemiplegia or
athetosis resulting from (ruptured) hæmorrhage
during the process of parturition - The
birth-palsies of Dr Sorrel - In these
hemiplegic cases it must however be
remembered that the defect in the brain
is of the nature of processes, in
which an operation will be futile. In
hydrocephalic cases, (with) & in cases of
cerebral hypertrophy also Trephining
may be of benefit, & tapping has lately
been advantageously resorted to in cases
of tuberculous meningitis with Effusion.
And lastly Mr Anderson's case shows
that temporary benefit at any rate
may arise from the relief of pressure by
Membranes in the case of Syphilitic
inducity. Whether in the future it
may be possible to release convolutions
bound down by morbidly thickened
membranes, & consequently likely to
atrophy, is a question of Surgical
skill which I am unable to answer
but with the improved & improving
technique of operative procedure it
is not safe to say that anything is
impossible to the (experience of the) Surgeon