

[Transactions of the Pathological Society of London].

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Publication/Creation

[London] : [publisher not identified], 1887.

Persistent URL

<https://wellcomecollection.org/works/tk2n9ab5>

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Round-celled sarcoma of the spinal cord and brain. (Card specimen.)

By W. P. HERRINGHAM, M.B., and D'ARCY POWER, M.B.

THE specimen was removed from the body of a woman aged 29. The leading symptoms in the case may be briefly summarised as follows:

January, 1886.—Numbness and anæsthesia of the legs, followed by pain in the back of the legs, afterwards reaching to hips and loins.

February.—Paraplegia with paralysis of the sphincters.

June 24th.—Slight optic neuritis.

July 30th.—Pain in head.

August 7th.—Delirium.

13th.—Death.

The growth occupies, in the spinal cord, the cauda equina and lumbar swelling, slightly eroding the bodies of the vertebræ, and spreading down the nerves.

In the brain there are growths in the corpus callosum, third ventricle, anterior horn of the lateral ventricle, and optic chiasma.

There are also many small nodules in the cerebellum, and in each internal auditory meatus.

December 6th, 1886.

Imperforate anus ; (A) male, (B) female. (Card specimen.)

By D'ARCY POWER, M.B.

A. THE rectum and urino-genital organs of a male infant. The anus is imperforate. The rectum opens by a small aperture, through which a black bristle has been passed into the prostatic portion of the urethra immediately to the left of the verumontanum. The situation of the anus is marked by a small papilla in front of the upper portion of the bristle.

The specimen was obtained from the body of a child aged twenty-

three days; lumbar colotomy had been performed three weeks before death.

B. The rectum and urino-genital organs from a newly-born child. The anus is imperforate, and the rectum opens by a large aperture into the posterior wall of the vagina. A glass rod has been passed through this opening. The other organs are natural.

The specimens are preserved in the museum of St. Bartholomew's Hospital, Nos. 3640, *a* and *b*. November 16th, 1886.

A dermoid cyst of the right testis.

By D'ARCY POWER, M.B.

IN presenting for your inspection to-night this dermoid cyst of the testicle I must apologise to you for its small size. If it had been allowed to grow, however, I have no doubt but that it would in a short time have rendered itself more worthy of your notice. It is of interest, however, for two reasons: in the first place because it is an example of this rare congenital tumour, and secondly, because, so far as I have been able to discover, it is the first specimen of its kind which has been shown before this Society of which any record is preserved.

Dermoid cysts of the testicle are of much greater rarity than the references to them in text-books of pathology and surgery would warrant us in supposing. Verneuil,¹ after careful search through the literature of a period of more than two centuries, could only bring forward ten instances of such tumours, and they do not seem to have become more numerous since the year 1855, when he published his collection of cases. This scarcity is due in great measure to the fact that many specimens are allowed to pass unrecorded, for during the last few years more than one case has, I believe, been observed at the Hospital for Sick Children in Great Ormond Street.

For the present specimen, as well as for the clinical details which

¹ 'Arch. Gén. de Méd.,' 5th series, vol. v, p. 644, 1855.

accompany it, I am indebted to Dr. Stanley Wood, of Pontypool, and to his assistant Mr. C. C. Harris. The testicle was removed from a healthy child, aged 4 years, in whom the swelling had been observed for three years. During the early part of this period the tumour only slowly increased in size, but during the eighteen months preceding castration its growth was more rapid. Before removal the testis was freely movable in a normal scrotal sac which was without scar. The enlarged gland felt smooth, it was ovoid in shape, regular in outline and heavy. There was some sense of fluctuation in parts, but there was nowhere any translucency. No nodules could be felt on palpation, but the fluctuating parts were less resistant than the rest of the gland. The testicular substance could not be felt and the epididymis was imperceptible; it was therefore apparent that the body of the gland was implicated, and castration was deemed advisable. The spermatic cord was slightly thickened. The parents, so far as could be ascertained, were without malformation.

A closer examination after removal revealed the following characteristics. The right testis is affected, and this is of interest since in the ten cases collected by Verneuil the right organ was affected in six cases.¹ The testicle measures two and a quarter inches in length by one and three quarter inches in thickness. The spermatic cord was at first indistinguishably blended with a mass of muscular tissue and blood-clot, but by a little dissection its component parts have been unravelled, a bristle being passed into the cut extremity of the healthy vas deferens. The epididymis is present as a flattened band lying, as the testis has been divided, between the spermatic cord and the tumour. The tumour itself occupies the whole of the body of the testis, and is enclosed by the smooth and somewhat thickened tunica vaginalis, which is not, however, adherent to it. After the testis had been preserved for some months in spirit the tumour measured two and a quarter inches in length by one and a quarter inches in thickness. On section it is seen to consist of a number of cysts filled with a substance of gelatinous consistency. The cysts vary in size from a small pin's head to one which occupies the whole of the posterior border of the organ. In the recent state this large cyst contained a number of long and delicate hairs which sprang from the deeper layers of its lining membrane. The rest of the tumour is formed

¹ Op. cit., vol. vi, p. 29.

by the thick septa between the cysts; they consist of dense fibrous tissue with fat, and in some parts eyots of calcified cartilage.

Microscopical examination shows that the gland tissue has entirely disappeared from the body of the testis. The wall of the largest cyst consists of an epidermis and corium. The free edge of the epidermis is turned towards the interior of the cyst, and it appears as if the proliferation of the cells from this edge had formed the gelatinous contents of the cyst, the cells themselves having undergone some colloid change. The epidermis consists of a thick layer of stratified epithelium lying upon a well-marked rete Malpighii. In some places the epithelium appears to have been tilted forwards, so that the constituent layers form an angle with the surface instead of lying parallel with it. The corium consists of dense connective tissue containing in its deeper part a considerable quantity of fat and a large number of hair-follicles. Each follicle has well-developed sebaceous glands in connection with it, and each contains a non-medullated hair. The connective tissue is dense and has many of the characters of embryonic fibrous tissue. The minute structure of the tumour is therefore of the same type as the one examined by Professor Goodsir for Dr. Duncan, of Edinburgh.

The specimen is preserved in the museum of St. Bartholomew's Hospital, Series xxxvi, No. 2810 (*a*) and Series lv, No. 122 (*b*).

October 19th, 1886.

A neglected point in the pathology of Colles' fracture.

By D'ARCY POWER, M.B.

THE point to which I am desirous of calling your attention this evening, Mr. President, is one that may appear to be well known to those members of the Society who have made a special study of the pathology of Colles' fracture. It is not yet sufficiently known, however, if I may judge by the answers which I have received from a large number of pathologists to whom I have at various times shown these specimens. They have for the most part replied that the preparations were not such as agreed with the ideas which they had formed as to the pathological appearances presented by this variety of fracture. I am aware that cases occur in groups, and that even special and rare forms of injury may present themselves repeatedly to any individual observer, but I do not believe that unless this kind of fracture were much more common than it is usually supposed to be, so many examples of it could have come under my notice in such a comparatively short space of time.

The point, then, which I wish to bring under your notice is that in a large number of Colles' fractures the lower fragment of the radius is split by one or more fissures which extend into the joint. The fracture, therefore, is very frequently not simple, with or without impaction, as is usually supposed to be the case, but is in reality a comminuted fracture involving the carpal articulation. I further hold that such comminuted fractures cannot be distinguished from the simple fractures without the most careful examination, and that sometimes it is impossible to distinguish the two varieties without actual dissection since the deformity may be identical. From an examination of the specimens preserved in the various museums attached to the metropolitan hospitals I have ascertained that, from a pathological standpoint, the comminuted fracture is slightly more common than the simple form. Fifty-nine¹ specimens are preserved in London, and of these thirty-one have the lower fragment comminuted, the fracture implicating the

¹ Appendix II.

carpal articulation. In several of these cases the fractures occurred many years before death, but good smooth union has resulted, and a useful joint has in nearly all cases been obtained.

My attention was first called to this subject when I was acting as house surgeon at St. Bartholomew's Hospital. A man aged 39, whilst cleaning a window after breakfast, fell a distance of about eight feet, first on to some spiked area-railings and then on to the pavement. He walked from a cab into the surgery, a distance of about twenty yards, without assistance, and as my dresser happened to be away I examined him myself, diagnosed an ordinary Colles' fracture, and proceeded to place his arm in splints in the ordinary manner before I admitted him into a ward, on account of other and more serious injuries which he had received. The patient subsequently died, and I had an opportunity of dissecting the lower end of his radius, which I here exhibit to the Society. The further details will be found in the list of cases which I have placed as an appendix to this paper.¹

The occurrence which I have just narrated happened at the end of my yearly tenure of office, and therefore at a time when I might be supposed to be familiar with the appearances presented by Colles' fracture, for I apprehend that few practitioners are so thoroughly conversant with the diagnosis and treatment of the various forms of fracture as the house surgeons at a large general hospital, and of fractures coming under their notice Colles' is, perhaps, the most common. In this instance, however, I have no hesitation in saying that there was absolutely nothing which suggested to my mind that in this particular case the injury differed in any respect from other cases of simple Colles' fracture which I had been accustomed to treat with tolerably good results. Yet here is a bone in which the lower fragment has undergone very complete crushing, and in which, if at all, one would have expected to make out the comminution. It presented, however, the typical deformity of a Colles' fracture, and the ordinary amount of difficulty was experienced in getting the parts into good position.

After meeting with this case I took care to make as accurate an examination as was possible of all the examples of Colles' fracture which occurred in the hospital, and owing to the kindness of Mr. Bowlby, our surgical registrar, I have been able to examine several recent cases both before and after the removal of the bones

¹ Appendix I, Case 1.

from the body. Such opportunities are rare, but during the years 1884 and 1885 we appear to have had an unusual proportion of cases in which patients died who had sustained this injury. During the last eighteen months, however, no similar instance has presented itself. In each case before an incision was made into the arm the fracture presented the usual deformity, and there was nothing to indicate that the lower fragment was splintered; and yet in each when the parts were dissected the fracture was found to extend into the joint. In other patients who survived, and in whom I have no doubt that a similar injury has occurred, recovery took place almost as well as when the radius had merely undergone a simple fracture. As instances of this may be quoted the cases related in Appendix I, Nos. 4 and 6, and the specimens which may be found here and there in the various pathological museums, in which even after severe comminution a good and useful joint has resulted. Although in the greater number of cases it appears impossible to distinguish between the simple and the comminuted fractures of the lower end of the radius, yet in some there is no doubt that crepitus can be obtained between the separated fragments. Since, as I have already stated, nearly all the cases appear to recover with fairly useful wrists, the prognosis of such a fracture is not necessarily more unfavorable than in the simple form. In enumerating the causes of stiff wrist after Colles' fracture, however, such implication of the joint should be placed high upon the list, but it is a cause which cannot be guarded against, and which certainly cannot be treated.

So far then as my observations have proceeded they agree with the statement made by Mr. Clement Lucas that "pathological specimens show a very large proportion of comminuted fractures,"¹ but they hardly bear out the further remark that only "the worst cases, such as are caused by falls from a great height, as a rule yield to *post-mortem* observations." There are, as I have already shown, several specimens in London in which comminuted fractures of the lower end of the radius occurring long before death have been repaired, and many more cases might easily be collected in which comminuted fractures have not been followed by any fatal results. I think then that it is fair to assume that comminuted fractures involving the carpal joint are much more common than

¹ 'Guy's Hospital Reports,' vol. xlii, p. 388.

is usually supposed, and that their diagnosis during life is extremely difficult.

In looking through some of the extensive literature on the subject of Colles' fracture I find that Mr. Callender¹ and more lately Mr. Hutchinson and Professor Bennett,² have recognised the comparative frequency of comminution of the lower fragment; but I do not find that any observer, with the exception of Mr. Hutchinson, has pointed out the close similarity which this variety bears to the simple form of Colles' fracture. Mr. Callender indeed laid it down as a general rule that "the less the deformity and the less the impaction the worse the prognosis, because of the splintering of the lower fragment," though this appears only to hold good for those rarer cases in which the comminution can be felt during life.

I have annexed two appendices, one giving short abstracts of some of the cases upon which I have based my observations this evening, and the other containing in a tabular form the various specimens of Colles' fracture which are preserved in the pathological collections attached to the hospitals in London.

APPENDIX NO. I.

The following are short accounts of the cases upon which I have founded my conclusions in reference to Colles' fracture.

1.—A man aged 39 fell from a distance of about eight feet on to some spikes and thence to the pavement, and was admitted with slight bleeding from the right ear, a Colles' fracture of the right arm, and a punctured wound over the crest of the ilium. He was pale but not unconscious; he vomited once and died seven hours later without rallying from his state of collapse.

At the autopsy there was an extensive rent dividing the right end of the right lobe of the liver; extensive fracture of the ilium, and a complicated fracture of the vault of the skull, the fracture extending through the middle fossa.

¹ 'St. Bartholomew's Hospital Reports,' vol. i, p. 293.

² Remarks on Colles' fracture read in the Section of Surgery at the annual meeting of the British Medical Association in 1879: quoted in Dr. McDonell's edition of Colles' works published by the New Sydenham Society, 1881, pp. 420-424.

The right arm presented to all appearance a typical Colles' fracture an inch above the lower end of the radius. On removing the lower half of the radius, however, the upper end was found to be slightly impacted into the lower fragment, which was greatly comminuted. The fracture extended horizontally across the centre of the carpal articular surface, the dorsal anterior half being again divided transversely near its ulnar margin. The ulnar facet was also divided but not in its whole extent. The main line of fracture was irregular and several pieces of bone were completely detached.

The specimen is preserved in the museum of St. Bartholomew's Hospital, Series iii, No. 925 (a).

2.—A man aged 43 fell from a first-floor window, and was brought into the hospital in an unconscious state. He had a comminuted fracture of the left malar bone and a Colles' fracture of the left arm. He never recovered complete consciousness and died on the sixth day.

At the *post-mortem* examination it was found that he had sustained a fracture of the anterior fossa of the skull without much splintering. The left forearm was the seat of a Colles' fracture, in which the upper fragment was well impacted into the lower. As a result of the impaction the lower fragment was cleanly divided by a horizontal and two longitudinal fractures into four pieces which were only held together by ligament. The articular surface, which corresponded with the semilunar bone, had disappeared; but there were only slight signs of inflammation in the wrist-joint. The styloid process of the ulna was torn off. This specimen is an extremely interesting one as it can be compared with a specimen preserved in the museum of St. George's Hospital, No. 3423 (b), in which after an almost exactly similar injury the patient lived for eleven weeks. In the latter specimen good bony union has taken place, and there is little or no evidence of joint disease, though in some parts the bone has undergone rarefaction.

The specimen is preserved in the museum of St. Bartholomew's Hospital, Series iii, No. 925 (b).

3.—A man aged 56 fell from a second floor window upon some iron spikes and from thence to the pavement. On admission he was found to have a fracture of the sternum, and what appeared to

be a fracture of the radius and ulna immediately above the thigh. He died on the eighth day after the accident, his death being accelerated by long-standing disease of the heart.

At the *post-mortem* examination his heart weighed 17 oz., the aorta was atheromatous, and the liver was fatty and had on it a small subperitoneal extravasation. The ulna was intact, but the radius was fractured three quarters of an inch above the thigh. The lower fragment was divided into four pieces, which were slightly displaced, but could not be reduced until after division of the long and short carpal extensor, of the extensors of the thumb, and of the supinator longus.

The specimen is now in the New Museums, Cambridge.

In my opinion the preparation may not only be compared with the preceding cases, but also with the next specimen, in which I believe that had the patient died a very similar condition of affairs would have been found; he did not do so, however, and finally obtained a very fairly movable joint.

4.—A man fell from a warehouse platform three stories high. On admission he had a comminuted fracture of the left tibia and fibula. He also had a fracture of the left radius about an inch above its lower end. On admission there was a depression over the fragments, which were freely movable. The ulna was dislocated from the carpus for about a quarter of an inch. The forearm was in a condition of pronation. It was treated by a pistol splint, and was subsequently encased in plaster of Paris. Two months after the injury the wrist was a little swollen and red, and the fingers were rather stiff. Supposing the previous patient had lived I have little doubt that at the end of the same time a similar note would have been made of his condition.

5.—In another case, a man aged 34 fell a distance of thirty feet, and sustained a fracture of the lower extremity of the left radius, which was at first mistaken for a dislocated carpus. At the same time a small hæmorrhage appeared to have occurred into the spinal cord, for he subsequently had anæsthesia of the lower limbs with paralysis of the bladder. He eventually recovered, and ten weeks after the injury the note states that his wrist was swollen, but that he had fair movement in his fingers.

The following is another example of what would, I am sure, have

been found to be a comminuted fracture of the lower fragment if the radius could have been examined.

6.—A woman aged 70 fell down a flight of thirty stone steps sustaining a slight concussion of the brain. She fractured the fifth left metacarpal bone, and was admitted with an injury which was supposed to be an ordinary Colles' fracture of the right arm. The fracture of the radius extended obliquely upwards and outwards, and there was comparatively little displacement. A month later, when the splint was removed from the right arm, it was found that although passive movement had been practised from an early period, the fingers could not be moved without much pain.

APPENDIX No. 2.

In investigating this feature of Colles' fracture I have taken the trouble to look at the specimens preserved in the various pathological museums in London.

In the Hunterian collection there are five specimens of Colles' fracture, of which the lower fragment is comminuted in three cases; in one the fracture is simple, and in one the union is too complete to decide whether it was or was not comminuted.

In the museum of St. Bartholomew's Hospital we have fourteen preparations illustrative of this form of fracture, and one example of an incomplete separation of the lower epiphysis. Five of these are simple, but in the remaining nine the fracture extends into the joint.

At Guy's Hospital there are seven examples of which, curiously enough, only two present the splintering of the lower extremity of the radius, and these two were obtained from the same patient. On the other hand, in St. Thomas's Hospital, there are only two fractures of this nature, and in both the lower fragment has undergone comminution. In St. George's Hospital, as at St. Thomas's, there are but two preparations, of which one is simple and the other is the comminuted fracture to which allusion has already been made. In the museum of King's College Hospital, on the other hand, there are six examples, of which two are simple and four are comminuted. The London Hospital possesses three cases of simple fracture and five cases of comminuted fracture; whilst

University College has no examples of comminuted fracture, but it has five of simple fracture which are in all cases of long standing. At St. Mary's Hospital there are three examples of simple fracture and three of comminuted. Two of these cases are of extreme interest, for they, too, occurred long antecedent to death, and the union which has resulted is quite as good as in simple fractures. The museum of the Middlesex Hospital contains three examples of Colles' fracture, all of which are comminuted, but as two of them are the result of direct violence due to the passage of a wheel over the arm, only one should be reckoned. Charing Cross and Westminster each contains a single example of a comminuted Colles' fracture.

The Hunterian Museum.

No.	Nature of Injury.	Remarks.
954	...	Fracture of long standing.
955	Comminuted	Fracture extends into joint. A portion of the dorsal surface near the ulnar facet has been broken off. There is good and smooth union.
955 (a)	Comminuted	Fracture extends into joint: the resulting union is good.
956	Simple	...

The Museum of St. Bartholomew's Hospital.

923	Simple	...
927	Simple	...
928	Simple	...
929	Simple	...
930	Simple	...
930 (a)	...	Colles' of long standing.
924	Comminuted	Much crushing of lower fragment, scaphoid broken across.
925	Comminuted	Appeared to be a simple Colles' during life.
925 (a)	Comminuted	Much crushing of the lower fragment.
925 (b)	Comminuted	Very similar to the specimens preserved in Guy's Hospital, No. 1118 ²⁰ ; and in St. George's Hospital, No. 3423b; details in Appendix I, Case 2.
925 (c)	Comminuted	...
925 (d)	Comminuted	By direct violence, a heavy van passed over arm.
926	Comminuted	The lower fragment has been split, but has repaired itself in such a way that the fissure into the joint is a mere line.

The Museum of Guy's Hospital.

No.	Nature of Injury.	Remarks.
1117 ⁴¹	Simple	Colles' fracture of long standing.
1117 ⁴³	Simple	...
1117 ⁴⁴	Simple	...
1117 ⁴⁵	Simple	...
1119 ¹⁰	Comminuted	See 'Guy's Hospital Reports,' S. iii, vol. 7, p. 267.
1118 ²⁰	Comminuted	Typical splintering of both radii resulting from a fall from a height.

The Museum of St. Thomas's Hospital.

B ₁₆	Comminuted	The fracture extends obliquely into the joint.
B ₁₇	Comminuted	The lower fragment is much crushed.

The Museum of the London Hospital.

Gbi ₃ (228)	Simple	...
Gbi ₅	Simple	...
Gbi ₁₉	Simple	...
Gbi ₂ (227)	Comminuted	Fracture extends into the joint: the lower fragment is divided into two portions.
Gbi ₆	Comminuted	Much comminution of lower fragment; ulna fractured.
Gbi ₈	Comminuted	An oblique comminuted fracture of the radius; a longitudinal fracture passes into the joint. The patient fell from a window straight on to his feet, and afterwards fell forwards. The left wrist showed all the signs of a Colles' fracture, the hand being displaced backwards.
Gbi ₉	Comminuted	The fracture extends into the joint. The accident was not diagnosed during life; the patient died of pyæmia after an injury to the head.
Gbi ₁₁	Comminuted	After smashed hand.

The Museum of University College.

211	Simple	Old Colles' fracture.
212	Simple	Old Colles' fracture.
213	Simple (?)	Old Colles'; a small piece of the articular surface is separated, but I think accidentally, after death.
214	Simple	Old Colles'.
217	Simple	Old Colles'; the ulna is also fractured at same level as radius.

The Museum of King's College Hospital.

No.	Nature of Injury.	Remarks.
645	Simple	...
646	Simple	...
639	Comminuted	Bony union; cast of St. Mary's specimen.
640	Comminuted	Vertical fissures run downwards, but do not extend into the joint. There is bony union, with very slight deformity. Cast of St. Mary's specimen.
643	Comminuted	Fracture extends into the joint. The styloid process of the radius is broken off. The interarticular fibro-cartilage is ruptured.
647	Comminuted	Fracture extends into the joint, and although the patient lived six weeks there does not appear to be any evidence of joint disease. From a woman aged 63.

The Museum of St. George's Hospital.

3423 (a)	Simple	...
3423 (b)	Comminuted	Typical splintering of both radii, eleven weeks after a fall upon both hands from a height of twenty feet. There is good bony union, with little or no evidence of joint disease. The bone between the fractured portions is rarefied.

In the Museum of St. Mary's Hospital.

A a 54	Simple	...
A a 96	Simple	...
A a 163	Simple	...
A a 77	Comminuted	The fracture is doubtfully into the joint. There has been complete union. The preparation is a cast.
A a 78	Comminuted	The fracture extends into the joint. The injury occurred in a man aged 80, two years before his death. Good smooth union has taken place with only slight deformity.
136	Comminuted	The comminution of the lower fragment is very slight, and it hardly extends into the joint, a thin shell of bone intervening.
136	Comminuted	The fracture involves the joint. There has been good smooth union. From the same patient as the preceding, but of much older date. The clinical details are wanting.

In the Museum of the Middlesex Hospital.

No.	Nature of injury.	Remarks.
23 16	Comminuted	There is an extreme amount of comminution of both the radius and ulna.
234	Comminuted	Both bones have been comminuted by direct violence.
235	Comminuted	The fracture involves the joint to a small extent upon the posterior portion of the ulnar side of the radius.

In the Museum of Charing Cross Hospital.

351	Simple	...
353	Simple	...
352	Comminuted	The joint is greatly involved.

The Museum of the Westminster Hospital.

51	Comminuted	...
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February 1st, 1887.

The sequel of a case of central sarcoma of the femur.
(Card specimen.)

By D'ARCY POWER, M.B.

A SECTION through the head and upper third of the shaft of a femur. The medullary cavity of the shaft and of the neck of the bone, nearly as high as the epiphysis, is invaded by a new growth. At the lower part of the shaft the growth has extended beyond the bony wall, invading the surrounding muscle and connective tissue. Microscopically, the growth is a round-celled sarcoma.

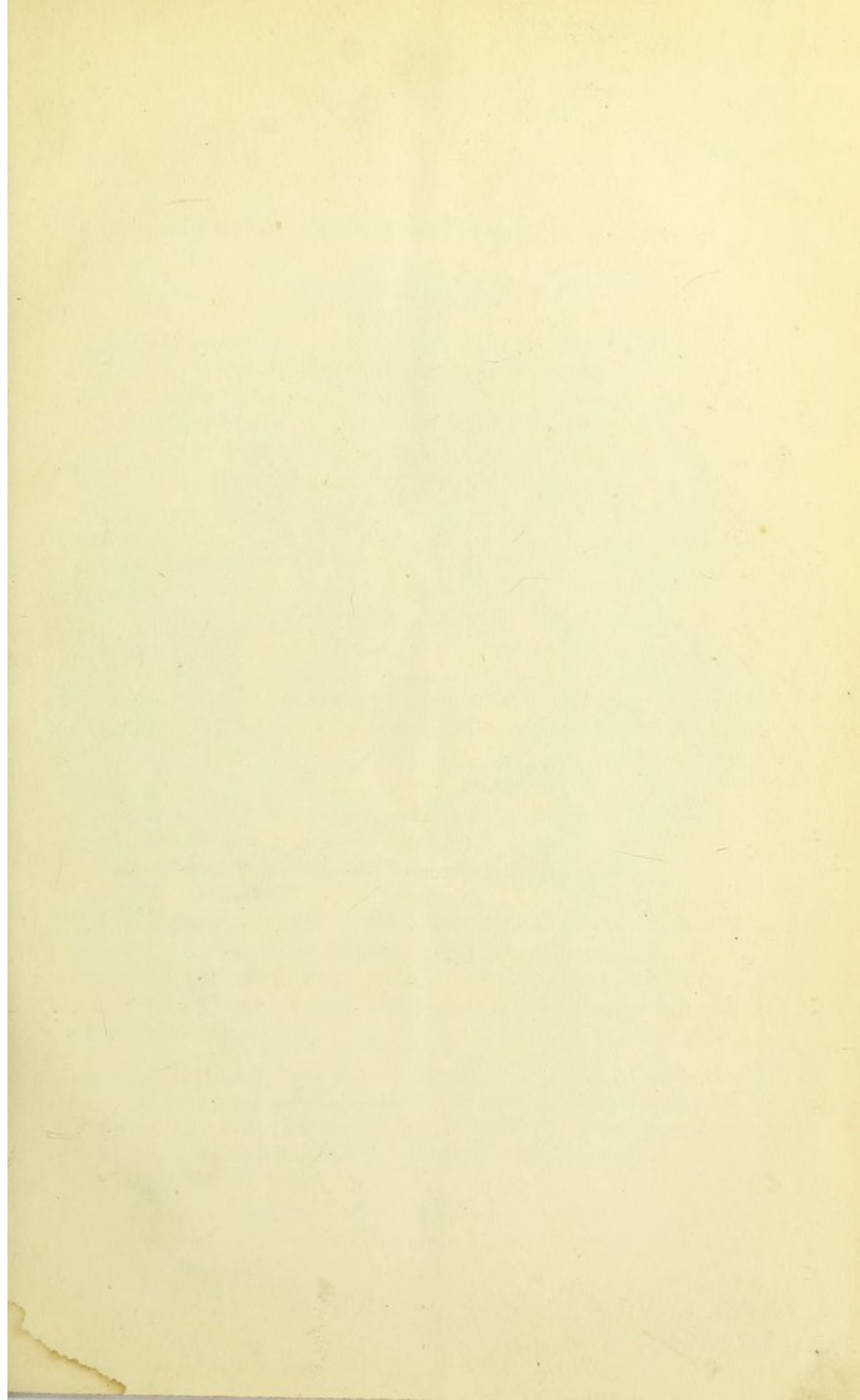
The details of the case, with drawings of the primary tumour, were published in the 'Transactions' of the Society, vol. xxxvii, p. 377, and Plate XIV, figs. 2, 3, and 4.

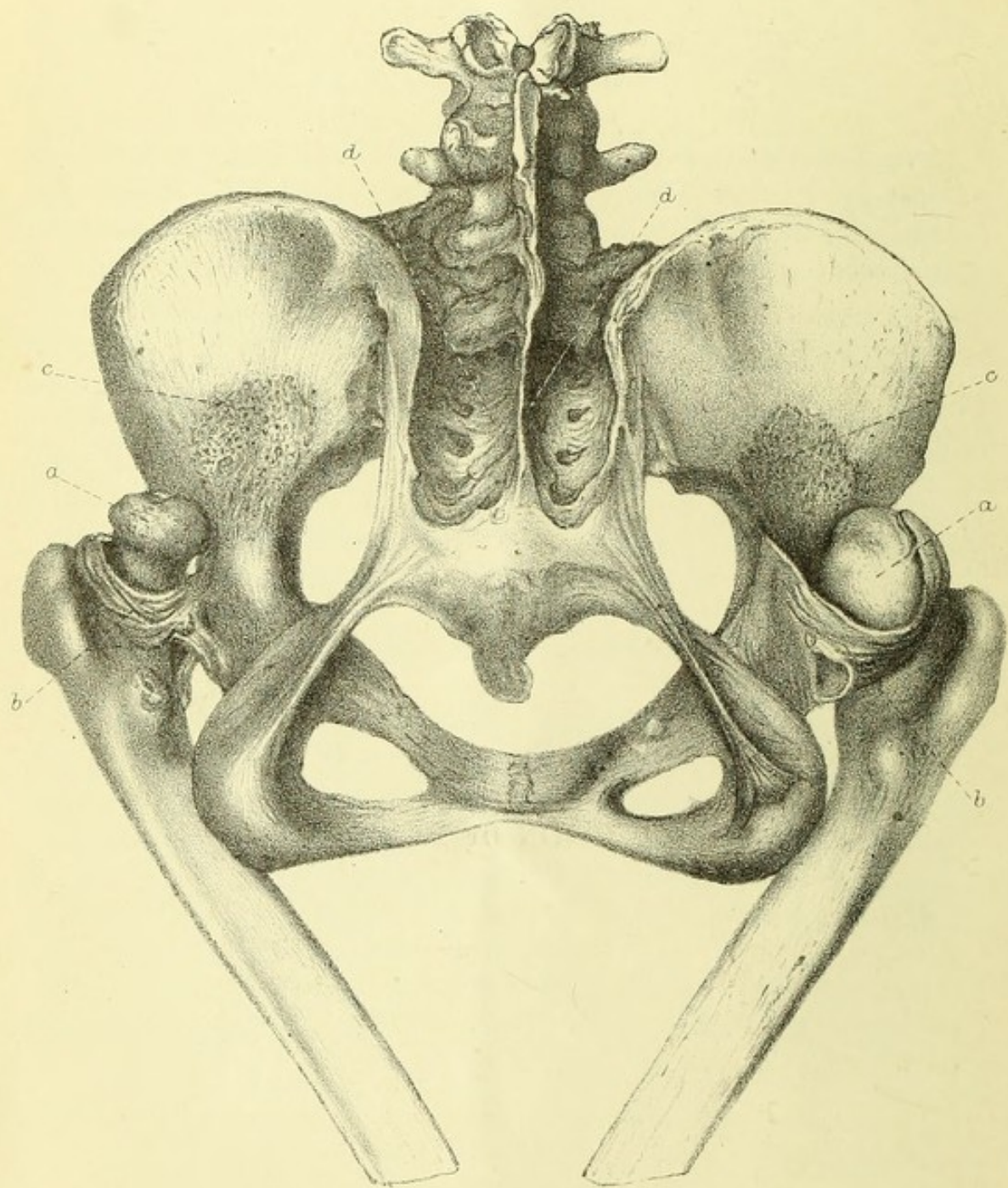
The patient, a gentleman aged 28, had suffered pain in his right thigh for four months. On examination a tumour was found in the long axis of the femur. Shortly afterwards, whilst turning in bed, the femur broke. Amputation was performed, and the patient made a good recovery.

Microscopical examination showed that the growth consisted of a round-celled sarcoma, which in its lower part was mixed with a large quantity of fibrous tissue, and was undergoing calcification.

In consequence of a recurrence of the growth, during which the patient twice experienced a sharp attack of pain, Mr. Langton disarticulated the stump of the femur, exactly seventeen months after the amputation had been performed.

The specimen is preserved in the Museum of St. Bartholomew's Hospital, Series I, No. 475 (b).
April 5th, 1887.





Congenital (?) displacement of the hip. (Card specimen.)

By D'ARCY POWER, M.B.

THE pelvis and femur of an adult female. The head of each femur is dislocated upon the dorsum of the ilium. Portions of the capsules of the hip-joints remain, but there is no vestige of either ligamentum teres. There has been absorption of the surface of the head of each femur, diminishing its size and giving it an irregular conical form. On the dorsum of each ilium there is an oblong, roughened patch, produced by friction of the heads of the thigh-bones in walking. The acetabula are represented by small triangular cavities. There is considerable lordosis of the spine.

The dislocations were probably congenital, but the history of the case is unknown.

The specimen is No. 1050 in the museum of St. Bartholomew's Hospital. It was added by the late Mr. Stanley, surgeon to the hospital (see Plate XI).
April 19th, 1887.

DESCRIPTION OF PLATE XI.

Drawing of an adult female pelvis with portions of femora attached, in St. Bartholomew's Hospital Museum, No. 1050, believed to be an example of congenital displacement of both hip-joints, but without history. The specimen has been dried with the ligaments preserved.

a a.—Head of femur on either side, in its displaced position on the dorsum ilii, but still within the capsular ligament *b b*, which has been laid open at the upper and back part. No trace of ligamentum teres. Head of femur on either side, much diminished in size and altered in shape, the left to a much greater extent than the right.

c c.—A slightly roughened and depressed surface of ilium, a little above the upper border of the sciatic notch, where the head rested on either side.

Surface of ilium generally smooth, and ridges denoting the attachment of muscles absent.

The acetabula, not shown in drawing, are represented by triangular depressions, with flattened margins; the upper portions of these cavities naturally formed by the projecting lip of the iliac segment of the acetabulum being entirely absent.

The lower portion of the innominate bone on either side, including the region which should naturally be occupied by the acetabulum, is narrowed and elongated, and the sciatic notch is therefore much altered in shape. The tuberosities of the ischia are everted and somewhat twisted.

d.—The sacrum shown to have assumed almost a horizontal position by the tilting of the pelvis and consecutive lordosis.

A rhinolith. (Card specimen.)

By D'ARCY POWER, M.B.

AN irregularly square rhinolith measuring nearly an inch across. It appears to have been formed round a piece of rag which has served as a nucleus. It weighs 33 gr., and chemical examination shows that it consists of a mixture of calcium, carbonate and phosphate. The concretion was removed from the inferior nasal meatus of a woman aged 24, who gave an indistinct history of having had a foreign body in her nose for upwards of twenty years.

The specimen is preserved in the St. Bartholomew's Hospital Museum, Series lii, No. 254 (a). March 3rd, 1887.

Further specimens of intermuscular synovial cysts.

By D'ARCY POWER, M.B.

[With Plate XXIII, fig. 2.]

IN the early part of the year 1885 I had the honour of bringing under the notice of the members of this Society four specimens of intermuscular synovial cysts occurring in connection with the knee- and shoulder-joints. In the communication¹ which I then made it was stated that these cysts in some cases resulted from the enlargement of one of the bursæ which are so frequently found beneath the muscles in the neighbourhood of the various articulations, whilst in other cases they were formed by a hernial protrusion of the synovial membrane of a diseased joint. In all the examples of this affection which I then exhibited I was able to find a direct communication between the cavity of the joint and the cyst, and I therefore drew the conclusion that my specimens more nearly resembled those which have been described

¹ 'Path. Soc. Trans.,' vol. xxxvi, p. 337.

by Mr. Marrant Baker than those which M. Foucher has detailed in the 'Archives Gén. de Méd.' for 1856. Finally, I was unable to discover any causal relation between these cysts and osteo-arthritis of the neighbouring joint.

The specimens which I exhibit to-night confirm in every respect my previous observations, both as regards the situation of the cysts and as to their mode of origin. Indeed, I should not have again troubled the Society with any further observations upon this point if one of the cysts did not show some important variations from the group previously described, inasmuch as it does not, nor ever did, communicate with the joint. For permission to show the specimens I am indebted to the kindness of Mr. Thomas Smith and Mr. Marrant Baker.

The first specimen somewhat resembles that which is figured in Pl. XII, vol. xxxvi, of the Society's 'Transactions.' It consists of the lower third of the right thigh and the upper third of the leg, from a man aged 41, who was a valet by occupation. On his first admission to St. Bartholomew's Hospital he had a large fluctuating but painless swelling upon the inner side of the right knee. The swelling had been noticed for six weeks and was at first confined to the calf of the leg, but subsequently it extended upwards to the knee. The patient was certain that he had received no injury over the seat of the enlargement, and he stated that the swelling attained its maximum size in two or three days after he first noticed it. Upon aspiration 6 oz. of clear synovial fluid were drawn off and shortly afterwards the patient was discharged. Three months later he was readmitted, saying that the cyst again began to refill about a week after he left the hospital. The right leg now measured over the swelling three and a quarter inches more than the left, and there were two fluctuating tumours on the inner side of the knee, each being about the size of half an orange and communicating with its fellow. The swelling was again aspirated and 4 oz. of synovial fluid containing flakes of mucus were obtained. Four months later, after having been readmitted and discharged in the interval, the patient again entered the hospital with all the symptoms of general tuberculosis. The right knee-joint was then swollen but painless, and there was a large fluctuating swelling over the lower and inner side of the knee, which, as before, communicated with a second swelling near the upper and front part of the joint. Six weeks later, or ten

months after the first appearance of the cyst, the man died of tubercular phthisis.

Upon making a dissection of this joint after the *post-mortem* examination, an irregular cystic swelling containing serous fluid in which floated a large number of melon-seed bodies, was found lying immediately beneath the skin upon the inner side of the joint, and occupying in part the position of a bursa between the semi-membranosus and semi-tendinosus tendons. The cyst was lined throughout by a thin membrane which forms its wall; it was irregularly hour-glass in shape, the two swellings lying opposite the inner condyle of the femur and the upper and inner part of the calf respectively, the constriction between the two parts being apparently due to the passage across the cyst of the sartorius and gracilis tendons. The lower portion of the cyst was the more superficial, and lay entirely in the connective tissue above the muscles, for it could be readily separated from the tibial border of the inner head of the gastrocnemius. Under the hamstring tendons the constricted portion of the cyst opened by a tortuous passage into a second dilatation situated immediately beneath the popliteal vessels and nerve, to the fibular side of the inner head of the gastrocnemius and in close contact with, but not opening into, the bursa which lies under this portion of the muscle. From this point the cyst could be traced beneath the gastrocnemius muscle, where it again dilated into a large sac which was, so far as I could find, terminal. The popliteus muscle was found on exposure to be greatly distended and at the same time much thinner than usual. On cutting through it a large ramifying cyst was situated beneath it, filled, as in the preceding case, with mucous fluid containing numerous melon-seed bodies. The cyst beneath the popliteus muscle appeared to be a dilatation of the subpopliteal bursa. It was separated from the larger cyst by a thin but dense membranous septum as well as by the expanded popliteus muscle, and it did not appear that the two cysts had ever been in communication with each other. Neither of the cysts were in either direct or indirect communication with the synovial cavity of the joint. Of this I assured myself by fully distending the sacs with spirit and finding that none of the fluid escaped into the knee, an experiment which was subsequently confirmed by careful dissection. The knee-joint itself contained no excess of fluid. The cartilages were everywhere natural except for a slight roughening of

that which covered the external condyle of the femur and of the corresponding portion upon the patella. There were neither osteophytes nor ecchondroses. The ligaments, however, were much frayed and softened, and the semilunar cartilages were in part worn away. The softening of the ligaments would account for an unusual mobility which was observed in the joint before death. The synovial membrane was thickened and its fringes were enlarged into irregular outgrowths which present microscopically all the appearances of tubercular disease.

The explanation of this cyst appears to be that, for some reason which I am at present unable to explain, but which is perhaps connected in this particular instance with the constitutional disease to which the patient succumbed, the bursæ in the neighbourhood of the right knee became enlarged. From the history it appears that the bursa lying beneath the sartorius tendon at its insertion first became distended, and this passing upwards has opened into the enlarged bursa lying between the semi-tendinosus and semi-membranosus muscles. The cyst thus formed, and following the line of least resistance, has passed backwards into the popliteal space, instead of opening into the joint or communicating with the exterior. It has then passed downwards into the loose areolar tissue of the ham, where it has dilated into a large cyst. At the same time the bursa beneath the popliteus muscle has undergone a similar cystic enlargement, but without opening, as it often does, into the knee-joint. The two cysts have not as yet fused, though it appears as if they would soon have done so had the patient survived.

I can only briefly allude to the second specimen, as an account of its general features has already been published in a medical periodical.¹ It is (Plate XXIII, fig. 2) the left knee-joint in a condition of acute inflammation, following upon the formation of an intermuscular synovial cyst which communicated with the joint. The cyst appears to be an enlargement of the bursa lying beneath the tendon of the semi-membranosus muscle. The point of especial interest about it is that it communicates, by means of a very narrow channel, with a pre-existing cyst, which is represented by a fibrous cord, only partially pervious, and which runs for an inch and a half along the inner margin of the gastrocnemius. It is better seen in the drawing, which was made whilst the specimen was fresh, than in the spirit preparation. The joint was obtained from a man aged

¹ 'Lancet,' vol. ii (1886), p. 970.

45, a maker of sieves, in whom the main symptoms of joint disease were intense pain on the slightest movement of the limb. Sixteen months before his admission to the hospital the synovial cyst, whose shrivelled remains are still seen, was opened with anti-septic precautions; its contents were evacuated, and the wound healed by first intention. Six months later a fresh cyst appeared and the joint became intensely painful. Amputation was performed, and the patient made a good recovery. In this case the other bursæ in the neighbourhood of the joint appeared to be normal, and the case therefore more closely resembles one variety of the cysts described by Mr. Baker, inasmuch as it coexisted with a diseased condition of the joint, with whose synovial cavity it communicated. It is remarkable that in this case the symptoms of disease of the knee did not manifest themselves until six months after the tapping of the cyst, and at a period coincident with the appearance of the second swelling. As in the previous case, the disease of the joint is tubercular in origin. The futility of aspirating cysts which are more or less directly dependent upon progressive joint disease, is, I think, rendered apparent by this case, for although the enlargement was for the time arrested, a fresh cyst very soon developed itself.

The third case presents yet another variety of such a cyst, to which attention has also been drawn by Mr. Baker. It is the left elbow-joint of a man aged 34, a porter in the General Post Office. He was first admitted to St. Bartholomew's Hospital on account of a painless swelling in the neighbourhood of the left elbow-joint. The swelling was oval in outline, and was situated immediately above the internal condyle. It had been observed for two and a half years, and was diagnosed by Mr. Marrant Baker, under whose care the patient was, as a cyst in connection with the joint. The swelling was tapped, but it rapidly reappeared, and for twenty months afterwards it hardly underwent any change. At the time of tapping it was observed that there were no signs of joint disease, but the forearm could not be completely flexed or extended. Twenty months later the patient was readmitted to the hospital, with a large abscess occupying the site of the cyst. This was allowed to burst spontaneously, and it was then washed out and drained, but the patient gradually lost ground until amputation was performed, after which he made a good recovery.

The specimen, which has been carefully dissected by my friend

Mr. E. W. Willett, shows that the capsule of the joint is distended on both its anterior and posterior surfaces, and is much thickened by chronic inflammation. The synovial cavity is in connection with the exterior by two sinuses, along which glass rods have been passed into the joint. The articular surfaces of the bones are inflamed, and are almost entirely denuded of cartilage. The cyst appears to have resulted from a hernia of the synovial membrane itself, such as is figured by Billroth, and examples of which I have already exhibited before the Society.

I may conclude my remarks this evening by observing that it is a significant fact that in two out of the three examples which I have shown the cysts were in connection with tubercular disease of the neighbouring joint, and this may, I fancy, in time to come, afford a clue to their origin.

The specimens are preserved in the museum of St. Bartholomew's Hospital, Series VII, Nos. 1205 e, f, and g.

February 15th, 1887.

DESCRIPTION OF PLATE XXIII.

FIG. 2.—Illustrates Mr. D'Arcy Power's paper on Intermuscular Synovial Cysts.

From a drawing by T. Godart.

It represents the left lower extremity, which has been amputated above the knee. In communication with the knee-joint is a synovial cyst, which has apparently developed from the bursa lying beneath the tendon of the semi-membranous muscle. This cyst communicates by a very narrow channel with a pre-existing cyst, represented by a partially pervious fibrous cord running along the inner margin of the gastrocnemius.

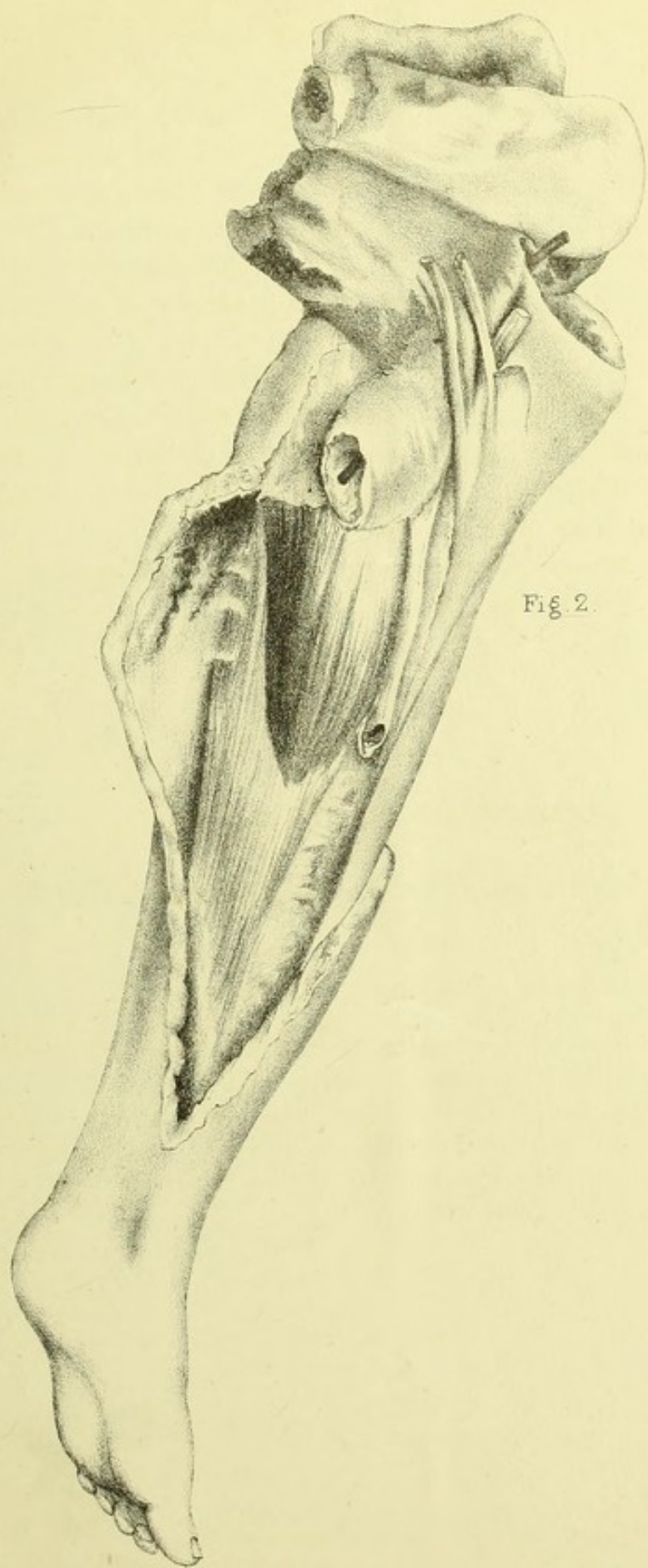


Fig. 2.

