

readily into the bladder; nevertheless, there is no stricture, for No. 15 (English) will enter.

1884, April 14. Exploration. The finger on entering the bladder encountered rugæ and a roughened surface of mucous membrane, especially at upper part of bladder. The neck of the bladder was exceedingly tight, grasping the end of the finger like a ring; I divided this at the lower border so that the tension ceased. Free bleeding followed. A tube was tied in four or five days. He recovered slowly, and gradually regained power to retain his urine; the intervals being from two to three hours in the middle of May—a condition for which he was extremely grateful. He takes out-door exercise, and is in no degree worse for it.

Case 42.—R. S. R., aged 63. Exploration: 1884, May 30. Tumour found and removed. (See Table, No. 20.)

Case 43.—W. K. E., aged 66. Severe symptoms for some time; prostate very large and irregular. I found a phosphatic calculus, and removed it May 19, 1884, but very little relief followed, in spite of daily injections, and much treatment of various kinds. He requires frequent catheterism, but the intervals are very short, and his suffering increased during the first week in June, and I decided to explore the bladder, and did so on June 12. No fragments of calculus had been left, but I found prostatic outgrowth forming a salient ridge, broad, and overlapping the base and sides of the internal meatus; tied in a tube, and exchanged it for a soft catheter next day. Great relief followed; he retained the tube eleven days, and after its withdrawal held his water two to three hours. June 28: he has not had such rest at night for several months, and the urine, which was highly offensive, and loaded with muco-pus, is now comparatively clear. July 10: he returns to the country almost well—better than I ever expected to see him. Sent to me by Dr. Sawyer, of Birmingham.

CHAPTER III.

TUMOURS OF THE BLADDER, THEIR PHYSICAL CHARACTERS AND INTIMATE STRUCTURE—SYMPTOMS AND SIGNS OF THEIR PRESENCE.

History of operations for vesical tumour in the male—Examples in the metropolitan museums—The author's cases—Intimate structure—Varieties—Symptoms—Physical signs—Examination of the urine.

THE literary history of vesical tumours is scanty; and inasmuch as, with few exceptions, its earlier records treat the familiar outgrowths from the prostate, and the rarer neoplasms which arise from the bladder, without distinguishing between them, not much is available for our purpose.

More than one attempt has been made of late to collect all the cases which may be hunted up among old authors, with the laudable view of collecting information on a subject so lately fraught with new interest, but the result is not successful. The material which has thus been apparently gained as regards quantity by somewhat indiscriminately sweeping the dusty pages of old surgical writers, in the keen search for any semblance of a vesical tumour, is found

to possess little value, from the uncertain quality of the produce so gathered. The only object worth attaining by antiquarian research is the discovery of undoubted examples of true vesical growths, and of some important facts respecting them, and not the production of a list, the extent of which suggests erudition, but is due to a miscellaneous collection of records embracing mere prostatic outgrowths on the one hand, and cancerous formations on the other, indiscriminately mixed with all the varied products which lie between them.

Carefully eliminating obviously useless matter, I will give a brief historical epitome of the few unquestionable operations made for the purpose of removing recognised tumours of the bladder, with a view of showing what surgery has hitherto done in the way of removing them.

HISTORY.—There is no doubt that Covillard, of Lyons, performed the lateral operation for a vesical tumour proper, in the year 1639, having previously diagnosed, by sounding, the presence of 'un corps dur et solide,' not a stone. He describes how he crushed it with the forceps, destroying and removing it, and records that the patient recovered.¹

The occurrence of flocculent, sprouting growths, as well as of more solid growths from the neck

¹ *Le Chirurgien opérateur : avec des observ. iatrochirurgiques*, par Joseph Covillard. 8vo. Lyons, 1640.

of the bladder (prostatic) was well known to the older surgeons. Le Cat refers to them, and to some observations made respecting them by Ruysch, Houstet, Le Dran, and others.¹ In the end of the last century, Deschamps, Boyer, Guérin (père), and Desault, besides others, refer to vesical outgrowths, but Chopart offers the best description of them under the head of 'Fungus of the Bladder' in his classical work, and here vascular papilloma is distinctly described as differing from the malignant and other forms.² Furthermore, he relates the case in which Desault, towards the close of the last century, recognised a pedunculated growth of considerable size in the bladder of a patient, as he was cutting for the stone in Hôtel Dieu; and relates that, after removing it, he twisted off the tumour with the lithotomy forceps, and that the patient made a good recovery.³ Then, very early in the present century, A. Petit, of Lyons, operating on a man aged 28, supposed to have the stone, found a large tumour, which, after consultation, was left untouched. The patient recovered from the operation, but returned to the hospital after a year to die, and at the autopsy the tumour was found to be of the size of a fist, and

¹ *Parallèle de la taille latérale*. Amsterdam, 1766, pp. 244-61.

² *Traité des maladies des voies urinaires*, par Chopart. A posthumous edition, edited by Félix Pascal. Paris, 1830; vol. ii. pp. 74-79. Chopart and Desault both died in 1795.

³ *Idem*, vol. ii. p. 97.

attached by a small pedicle which might have been easily divided.¹

The next definite record is by Civiale, who refers to three instances in which, subsequently to 1827, he removed small growths from the bladder evidently unimportant in size, with his original 'trilabe,' when crushing the stone, without any bad results. He also describes a similar operation on a fourth, much larger, the result of which was unsuccessful, and another case in Hôpital Necker, treated in the same manner, in 1834, with good result, adding that he has crushed other small ones with the lithotrite.² The nature of these operations necessarily precluded intelligent observation, or the acquisition of information respecting the growths themselves; and very little, if anything, is known of the ultimate history of the patients.

In 1834 Crosse, of Norwich, operated on a boy with severe symptoms of calculus, by the lateral operation, although on sounding he could find none, but several small tumours protruded from the wound, some of which he removed. The boy died in forty-eight hours, and a number of these growths was found in the bladder. The preparation is No. 2000 in the Hunterian Museum here.³

¹ *Dict. des Sciences Médicales*, vol. xliv. pp. 232-33. Paris, 1820. Article 'Polype,' by Vaidy.

² *Traité pratique*, vol. iii. pp. 152-61. Paris, 1860.

³ *Treatise on Calculus*, by J. G. Crosse, surgeon to the Norfolk and Norwich Hospital; plate xx. fig. 2, p. 124. London, 1835.

In 1874, Billroth, of Vienna, did the lateral operation on a boy of twelve to remove a tumour, a 'myosarcoma' of large size; finding the opening insufficient, he performed the suprapubic operation, and extracted it there. The boy made a good recovery.¹

In the same year Volkmann, of Halle, did the suprapubic operation for a man aged 54, removing a large myomatous growth, with a small pedicle only half an inch long, the patient dying of infiltration and peritonitis on the third day.²

Professor Kocher, of Berne, performed Nélaton's pre-rectal lithotomy, December 31, 1874, for a man aged 38, for the removal of a papilloma. The man was reported well one and a quarter year afterwards.³

At Addenbrooke's Hospital, Cambridge, Professor Murray Humphry did lateral lithotomy, October 17, 1877, for a man aged 21, removing a large tumour completely, the man recovering.⁴

Suprapubic lithotomy was done by Marcacci on a man aged 54 for vesical tumour in 1880. It was villous on the surface, but it was stated to be a 'spindle-celled sarcoma' throughout. He lived two months, dying of extravasation and peritonitis.⁵

Berkeley Hill performed lateral lithotomy at

¹ *Archiv für klinische Chirurgie*, band xviii., 1875.

² *Ibid.*, band xix. p. 682, 1876.

³ *Centralblatt für Chirurgie*, April 1, 1876.

⁴ *Medico-Chirurg. Trans.*, vol. lxii. pp. 421-27. 1879.

⁵ *Lo Sperimentale*, Oct. 1880; *London Medical Record*, Dec. 1880.

University College Hospital in 1880, removing a portion of an epithelioma, in a man aged 63, who died two days after.¹

Davies Colley, of Guy's Hospital, performed lateral lithotomy in April 1880, for a man aged 32, drawing out a long villous growth, and cutting it off with a pair of scissors close to the wall of the bladder.² Mr. Colley has just written me (May 1, 1884) that the man is at this time perfectly well, and has followed his occupation—that of a shipwright—ever since.

The first case in which I myself removed a tumour by operation was that of a man aged 29, on whom I did the median operation, November 6, 1880. I found a polypoid growth and removed the whole of it with a pair of forceps, twisting it off at the base of the pedicle. He made a rapid recovery, and is living and well at the present time.³

My subsequent cases—19 in number, 17 in males, as well as 2 in females, all the former having been discovered by digital exploration of the bladder, and treated by the limited perineal incision employed for that purpose—will be furnished in a table to be considered presently.

Mr. Whitehead, of Manchester, has adopted this method of treatment, and employed it with consider-

¹ Report of Surgical Registrar, Mr. Stanley Boyd, 1880. London: Harrison, 1881, p. 33.

² *Clin. Soc. Trans.*, vol. xiv. p. 104. 1881.

³ *Trans. Med. Chir.*, vol. lxxv. 1822.

able success. He has recently, in conjunction with Dr. Pollard, published six cases of operation for vesical tumour, four in the male, and two in the female. In two of the former a very favourable condition of the patient is reported nearly twelve months after operation, and the female cases, more recent, were well at the date of the report.¹

Certain other cases found recorded in the journals have been quoted by recent writers as examples of operation for vesical tumour, but are intentionally omitted here, since the operations in question have either failed entirely or partially to remove the tumour, or no such body has been present.²

It is also unnecessary to refer further to the history of operations for vesical growths in the female, since they have been long recognised as accessible to examination and amenable to surgical treatment without much difficulty. The well-known case by Surgeon Warner, of Guy's Hospital, in the former half of last century, occurred in a woman aged 24. He divided the neck of the bladder and

¹ *The Surgical Treatment of Tumours, &c.*, by W. Whitehead and Dr. B. Pollard (London: Churchill, 1883); containing much interesting matter, and valuable information on the subject.

² Thus Gersuny, Billroth's assistant at Vienna, performed the median operation in the winter of 1870-1, to remove a broken piece of catheter, and discovered a tumour, which could not be removed, and no attempt was therefore made. The patient died six days after, and the tumour was found at the autopsy in a recess at the back of the bladder. But clearly this is not an operation for tumour.—*Archiv für klinische Chirurgie*, band xiii. p. 131. 1871.

ligatured a large polypoid tumour with a successful result.¹

From the numerous well-known facts of a similar kind, and from the short list of operations on the male above recorded, it is quite certain that a considerable proportion of vesical tumours are removable, and that when completely or almost completely removed they often do not reappear. That is all which we gain from the study of the slender experience of the past, and, so far as it goes, it is not without value.

EXAMPLES IN MUSEUMS.—But there is another mode of studying the subject which has not been pursued to any great extent, and which nevertheless is fraught with greater promise; a mode, indeed, which it is only possible to pursue on an extensive scale in this country, since here only the requisite materials are to be found—I mean the study of the vesical tumours themselves, with their physical characters exposed to view, as found in the various museums of our metropolis, together with, in many instances, a few important facts relating to the character and history of those who were the subjects of the disease. It is among these important collections that we find the originals of those drawings which have served to familiarise the student, both here and abroad, with delineations of disease which they are rarely able to

¹ *Cases in Surgery*, by Joseph Warner, F.R.S., Surgeon to Guy's Hospital (London, 1750); and *Philosoph. Trans.*, vol. xlv.

see or dissect. Here are the very organs which were engraved for the works of Baillie, Hunter, Bell, Home, Crosse, and others and from which Civiale selected his subjects to illustrate the 'Traité pratique' in connection with this topic.¹

Of growths or tumours arising from the inner surface of the bladder and pursuing an independent development within the cavity, there were in the metropolitan museums, prior to 1882, about fifty examples preserved in spirit.

Forty-three of these were from adults of various ages; eight had occurred in young children. A large majority of the former or adult series had arisen in male patients; but as in a few preparations the sex is uncertain, no exact statement can be made. Of the eight children, six were female. In addition to these fifty cases there is about an equal number of growths and infiltrations preserved in the same museums, which are probably cancerous, and respecting which there is little more to be said. Returning to the non-cancerous growths it may be stated that, in respect of physical conformation, a considerable proportion of them consist of a single growth from the walls of the bladder, more or less pedunculated; and might obviously have been removed by operation without difficulty. Others are broad and sessile, developed into two or more lobes; and much more

¹ *Traité pratique*, vol. iii. pp. 107 et seq., figs. 9-13. Paris, 1860.

rarely there are two or more independent growths in the same bladder. Then some are delicate, soft,



FIG. 4.—Two growths, probably fibro-papilloma. From preparation No. 2006, Royal College of Surgeons.

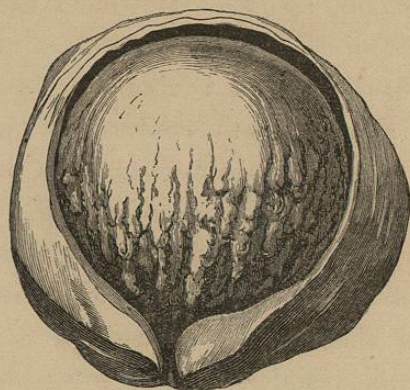


FIG. 5.—From a man aged 59. The tumour, which was of rapid growth, springs from a narrow base. As here seen, it fills the bladder, is chiefly solid, but covered with fimbriated papilloma. From prep. No. 2004, Museum, Royal College of Surgeons. A very similar preparation may be seen at University College Museum, No. 1475.

filamentous or fimbriated in structure; while others are firm and solid; much variety of density is to be

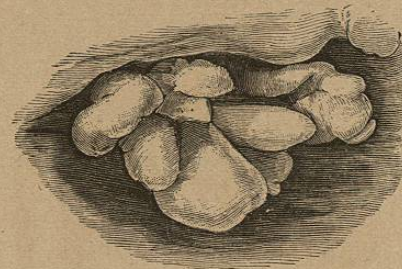


FIG. 6.—Firm polypoid growths, each with very narrow peduncle. Bladder everted to show them; no papillae present. From Museum of Guy's Hospital, No. 2104²⁸.



FIG. 7.—Small, firm, almost polypoid growth.

met with among different specimens in the fresh state, as my own cases have led me to observe.

In relation to the question of situation, it does not appear that any part of the bladder can be regarded as a particularly favourite spot for their origin; the orifices of the ureters, for example, as is stated by some. The lower half of the bladder is more frequently affected than the upper; and I think that is the only distinct statement relating to locality which can be made.

I have selected several of the most typical varieties and have made drawings from them which have been engraved in order to illustrate the subject of size, contour, and number, so important in relation to questions of surgical treatment, hereafter to be considered (see figs. 4, 5, 6, 7; also 1, 9, and 10).

THE AUTHOR'S CASES.—Next to the preserved examples may be considered the result of my own experience, derived from exploring the bladder, in the manner described in the preceding chapter. By means of this operation I have already encountered no less than twenty cases of vesical tumour. At the end of the volume will be found an account of them in a tabular form, which shows at a glance the following particulars: the age of the patient, the date of operation, the duration of symptoms up to that period, what was the earliest symptom observed, the result of examination of the urine before operation, the nature of the operation itself, the form and situation of the tumour, its structural elements after

examination, and the after results to the present time.

In some cases I have, as far as the sense of touch has enabled me to judge, removed the entire growth, and when unable to do so have taken away as much of it as possible; pruning, so to speak, the most salient portions, when the growth was inseparable from the walls of the bladder, a condition met with in several cases. In all instances, however, I have been very careful to examine the growth so minutely with the finger before operating, as to be able to offer a diagrammatic representation of its size and form. In each one of these cases I made a sketch at the time, representing to the best of my ability the impression thus obtained of the contour and situation of the growth in relation to the vesical cavity. These are reproduced here in order to illustrate each case when referred to; and thus fresh information in regard of the conditions likely to be met with in such cases has been obtained. I think in general terms it may be affirmed that a single tumour attached by a narrow pedicle to the wall of the bladder, and therefore resembling more or less the outline of a fig, is not very common, and to say that it may occur once in six or seven cases of non-malignant tumour probably approaches a correct numerical estimate. On the other hand, sessile growths, of which the base is perhaps the widest

part, are met with, perhaps quite as frequently as the pedunculated form just described: and then there are intermediate forms of every grade between the two; the preponderance in number perhaps being among the non-pedunculated class.

STRUCTURE.—We now come to structural characters. Hitherto most of the statements relative to vesical growths have been somewhat vague, since materials for observation have not been attainable. Thus it has been customary to regard 'villous' growths as a class; and these were at no very remote period termed 'villous cancer.' The existence of papilloma has been generally recognised; occasionally sarcomatous growths have been spoken of, although probably without intention to convey the meaning which modern pathology attaches to the term. After that, follow epithelioma and cancer. Then occasionally, but rarely, an isolated specimen has appeared at the Pathological Society of London, and has been subjected to a minute examination, but the total of these specimens has not afforded data for making any classification. Neither at present is it possible to form a complete generalisation, but valuable indications have been attained from the twenty cases now brought before you, which indicate a sufficient number of important facts to commence with. Every one of the tumours I have dealt with, including the few which have not been removed (since I have invariably taken

away a portion sufficiently large for complete histological examination), has been carefully treated by a competent observer, at first by Mr. Stanley Boyd, with one or two by Mr. Eve, and others by Mr. Shattock, while all the later ones (fourteen in number) have been laboriously investigated for me by Dr. Heneage Gibbes, from whom I have received in every instance a full written report on intimate structure and several microscopic preparations, some of which furnished the originals of some very accurate and beautiful drawings, made and engraved by Mr. T. P. Collings, and presented here.

After a survey of the museum specimens on the one hand, and a consideration of the facts determined by histological analysis of my own cases on the other, with Dr. Heneage Gibbes, I have made the following attempt at classifying these products, and I think it will be regarded as warranted by the evidence.

First, there is the simple mucous polypus which I have at present only found in the bladder of children, and in their cases only among the preparations in the museums referred to—some of which appear to be analogous in structure to the soft nasal polypus, a form of myxoma, while other specimens appear to contain, in addition, more of the deeper normal fibres of the structures from which the growth arises. In the specimens referred to, of which one was engraved