I think, safely conclude that, when hydatid tumours in the abdomen have attained a size large enough to be recognised as such, it is the best practice to puncture them.

Lettsomian Lectures

ON

MIDWIFERY AND DISEASES OF WOMEN.

Delivered before the Medical Society of London.

BY

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LECTURE I. (*Continued.*)

ON SOME POINTS CONNECTED WITH THE PATHOLOGY AND ETIOLOGY OF FIBROUS TUMOURS OF THE UTERUS.

2. *Fibroids* are heterologous growths, which may be described as originating from an abnormal or pathological blastema, and they are of two kinds—the fibro-plastic and fibro-nucleated, each variety being a permanent pathological state, resembling one of the transient forms of fibrous tissue.

a. One way in which fibrous tissue grows is—1. A blastema appears; 2. In this are formed a number of nuclei: these become cells with a single nucleolus. The cells elongate when split at the ends, and finally fibres are found. Lastly, the nucleoli disappear. The cells during elongation come to be spindle-shaped. Now the *fibro-plastic tumour* of Lebert is a tumour made up of these bodies, the nuclei being called *fibro-plastic nuclei*, the spindle-shaped cells *fusiform bodies*, and the fibres *fibro-plastic fibres*. In a fibrillary tumour these several bodies exist in vast numbers. The cells are perhaps more rounded than in ordinary fibrous tissue: the fibres sometimes exist in very large numbers, so that the tumour may be said to be almost entirely made up of them. The nuclei, however, never entirely disappear.

b. The *fibro-nucleated* fibroid is a permanent condition of the second mode of growth observed in fibrous tissue. In this tissue the fibres may be formed directly from the blastema without the intermediate agency of cells, *i. e.*, directly from the blastema; so that we have an appearance of cells and fibres quite distinct from one another. There may sometimes be very few fibres, so that the tumour may be said to be made up almost entirely of cells. Commonly, however, the fibres are present. Fibro-nucleated tumours are generally more malignant, and not necessarily encysted or circumscribed.

Intermediate between these two kinds of fibroids we may have very numerous differences, so that it may almost be difficult to say to which a given tumour exists, although the broad characters of a fibroid exist. To some such modification the recurrent fibroid may be referred, which is occasionally found in the uterus, in fibrous polypi, and in pelvic bodies. From the researches of Paget, which have been confirmed by subsequent writers, these tumours resemble the common fibrous tumours which are whitest, most homogeneous, least fasciculated and

glistening. Microscopically, the cells are more elongated, caudate, *oat-shaped*, many with long and subdivided terminal ends. Nuclei and grumous and granular matter, such as might arise from disintegrated cells, are also present. The fibres are very few and far between.

3. *Malignant fibroids* are said by Paget to resemble exactly in all particulars the ordinary fibrous tumours of the uterus, with undulating white bands. The whole substance of the tumour has the same characters microscopical and general as these, although repeatedly examined, *i. e.*, nothing but the compact well-formed fibrous tissue with imbedded elongated nuclei. On boiling, gelatine is freely yielded.

The association of cancer and fibrous tumours has been denied. The later pathological records, however, seem to leave no doubt as to their co-existence. Mr. Hilton exhibited to the Pathological Society (*Trans.*, xii, 219) a tumour of a cancerous nature probably, following a recurrent fibroid. M. Bouvier (*Annales de Chirurgie*, iv, 21) gives a case of similar nature, quoting others from Cruveilhier and Dumas. A similar case is given in the *Bulletin de la Soc. Anat.* (for April 1861, case 7), by M. Gillet, of general cancer in the abdominal organs with fibrous bodies *in utero* undergoing cancerous transformation. In a case to which I shall refer in the sequel, in the same tumour portions were cancerous and portions fibrous. To my mind, there can be no doubt that these two diseases do not uncommonly exist in the same tumour; and if malignant be understood to mean a tumour which may recur, and when cut or injured may leave an ulcerated surface which will not heal, there can be no doubt that this state is not uncommon in fibroids.

I cannot, however, stop here to discuss these points. To give, moreover, a treatise on fibrous tumours is no part of my intention. I can only glance at a few points, which in the sequel may be found useful to illustrate the practical points to which I wish particularly to call your attention. Whether we have to do with a true fibroid or fibroma with superimposed muscular tissue, these new growths in one important respect differ from uterus or muscle. If a fibrous tumour be wounded, so far as I am aware, it *never* heals by the first intention; it is followed by supuration, generally gangrene. In a few exceptional cases the wounds set up an irritation in the parts which leads to absorption of the tumour. Years ago, Atlee showed that fibrous tumours had *very little* vitality in them, less vitality, indeed, than most adventitious growths. The knowledge of this fact is most important, as I shall hope to show in the sequel. For, while advantage has been taken of it to perform certain kinds of operations upon fibrous tumour, as in enucleation, it has been completely overlooked in the operation of gastrotomy, and has been often, I believe, a cause of death.

The position which fibrous tumours occupy in relation to the uterus has led to their subdivision into three classes, each of which has peculiar symptoms of its own. 1. *Extrauterine or surface tumours*, *i. e.*, where they are situated just beneath the peritoneum. 2. *Intrauterine or cavity tumours*, where they are within the cavity of the uterus. 3. *Intramural or parietal tumours*, where they are imbedded in the walls of the organ. If the tumour-points be intermixed with much uterine tissue interposed here and there, some have made this another variety, and

called it interstitial. It is only, however, a modification of the parietal. In the first and last varieties the point of connexion may be more or less constricted and lengthened out, constituting a pedicle. In this case the tumours are called *pedunculated*; and, when the tumour is within the cavity of the organ, by common consent the name of *polypus* has been applied to it.

The size to which some fibrous tumours will grow is enormous. Commonly they weigh from 3 to 4 lbs., frequently 7 to 8 lbs. Krüll met one which weighed 36 lbs. Gaultier de Claubry one which weighed 39 lbs. Kraumer met a surface pediculated tumour 46 inches in circumference, and which weighed 40 lbs. Dr. Graily Hewitt met with one which weighed 42 lbs. Waller mentions one which weighed 74 lbs. The largest tumours, however, are the pedunculated.

Extrauterine fibrous tumours sometimes have very small and weak pedicles, and these occasionally give way. Then they either continue to float within the cavity of the abdomen, and are there nourished in a very analogous manner to the loose bodies in articulations. Sometimes, however, they become again attached to some portion in the vicinity of the uterus, bony or otherwise, and constitute the "*tumeurs pelviennes*" of Huguier, or the "*tumeurs fibreuses de la fosse iliaque*" of Nélaton, not usually noticed in classical works. A very full account of these is given by Huguier and Nélaton (*Gaz. des Hôpitaux*, 1860, 411, and 1862, 77). The former was the first to call attention to them in 1860. They may be *intrapelvic* or *extrapelvic*. They are generally situated between the fascia transversalis and the peritoneum. Huguier's first case was attached to the sacro-iliac synchondrosis; two others were attached to the left anterior superior spinous process; another to the fourth false rib and left crista ilii. A similar one was seen by Verneuil also attached to the left anterior superior spinous process. The two cases described by Nélaton were in the right iliac fossa, one attached to the crista. These tumours are never found in men, a fact which shows their origin from the uterus; and, curiously enough, they have always been found in women who have borne children. Their size varies from that of a nut to that of an apple; and of this size they have been met in the posterior cul-de-sac by Depaul, so as to interfere with labour. In their structure they exactly resemble the uterine fibrous tumour; another reason, as Barth emphatically asserts, which proves that they originate from the uterus (*Bull. de la Soc. Anat.*, vol. xix, 13). In one case recorded by Gosselin, and in another by Chassaignac, they were recurrent. In Chassaignac's case, where the écraseur was used, followed by the red-hot iron, the tumour recurred in fifteen days. A second operation, followed by the Vienna paste, proved more successful. These tumours are hard, not adherent to the external skin, with a certain degree of mobility, limited only by the pedicle, smooth on their surface. They are often the seat of pain locally, of a lancinating character, like the points of needles. This pain is often aggravated by pressure. The only point of difference in the feeling between these tumours and the so-called displaced ovaries is that, although pain is produced by their pressure, it is not attended with sickness, as in displaced ovary. Their growth is usually very slow, occupying years in development. There is a very in-

teresting case recorded by M. Demarquay (*Bull. de la Soc. Anat.*, xix, 13) of a pelvic fibroid which weighed upwards of eight pounds, surrounded by gross veins and made up of lobes. It was situated in the left iliac fossa, and partly ossified; another character common both to these bodies and to sub-peritoneal fibrous tumours of the uterus. No pedicle could be found. Barth, however, asserts that these pedicles are sometimes very minute, and may easily escape observation.

[To be continued.]

Original Communications.

PATHOLOGY OF BLOOD AND FEVER.*

By WILLIAM ADDISON, M.D., F.R.S.

Blood consists of two distinct parts: the corpuscles, and a fluid—the liquor sanguinis. During respiration blood absorbs a small portion of oxygen, and, at the same time, gives off carbon in the form of carbonic acid.

The amount of carbon expired from the lungs may be altered by many circumstances. Hunger and rest diminish, satiety and labour increase it. It is greater during the day than at night, and greater in children than in adults.

That the carbon expired from the lungs is discharged from the corpuscles of blood seems proved, by the change of colour they undergo in the lungs, and because in healthy persons the consumption of oxygen and the amount of carbonic acid expired are in a direct ratio with the number of corpuscles in the blood of the person.

Urine is a fluid withdrawn from the liquor sanguinis. It holds in solution a peculiar matter called urea. And it is to be observed amongst all classes of animals which have red corpuscles in their blood, that urea and uric acid, or one of the two, is a constant constituent of the secretion of the kidneys. But whence is urea derived?

The kidneys of an animal have been extirpated. In such cases, where the animal has survived the operation, a large amount of urea has been found in the liquor sanguinis. It is very clear, then, that urea is not formed in the kidneys. On the other hand, the chemical analyses of blood and urine by Andral and Gavarret, by Becquerel and Herberger, would seem to leave no doubt that urea is an excretory product of the blood-corpuscles. Herberger analysed the urine of a chlorotic girl on three occasions before, and twice after the use of iron. The amounts of urea before the use of iron are represented by the numbers 7.04, 7.00, and 7.12. After the use of iron these numbers rose to 26.8 and 27.3. In connection with these analyses of the urine, small quantities of blood have been taken from chlorotic girls and analysed before and after the exhibition of iron. In one case, previously to the use of iron, the amount of blood-corpuscles in a thousand parts of blood is represented by the number 46.0. After the use of iron for some weeks, this number rose to 64.0. In another example, the number before the use of iron was 49.0, after it, this number rose to 95.0.

The amount of urea in the urine increases, *pari passu*, with an increase in the number of corpuscles in the blood; and the presumption is, that the use of iron as a remedy for chlorosis would not have increased the amount of urea in the urine, had there been no increase in the number of corpuscles in the blood.

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