or engaged. If the head is found to be floating or too high, it is next necessary to attempt to force it down into the brim, and thus gain an idea of any disproportion that may exist between the head and the brim. This is best done by standing so as to face the woman and placing the fingers of both hands flat upon the head, and forcing it firmly backwards and downwards. By this manoeuvre one can recognize three degrees of ease in causing descent. Firstly, the head may be easily depressed deeply into the pelvis; secondly, it may be possible to depress it a slight distance, after which the sensation obtained is as if one were pressing the head on a mass of rubber; in other words, there is an impression of resiliency; thirdly, it is impossible to cause any descent at all. In many cases there is doubt as to whether the head can be made to descend, because small amounts of movement can scarcely be appreciated by the abdominal hand. If this be so, it is necessary to examine by Munro Kerr's method. The woman lies upon her back, and the finger of the right hand is held rigidly in the vagina so as just to touch the vertex if this is low enough to reach, while the left hand grasps the head and attempts forcibly to press it down. By this method a degree of descent too small to be recognizable by the abdominal hand alone can easily be appreciated by the vaginal finger. But the existence of mere descent is not enough. When the head is very high it can be pushed down on to the brim, but often not into the brim, which is the condition we aim at producing.

Having, then, made a full examination of the pelvis as above, the important point is the question of treatment for patients with pelvic contraction. The indications will be the position of the fetal head in relation to the brim, and the period of gestation.

Firstly, even if the measurements are contracted, but the head week by week during the last months is found to be engaged, or can easily be made to engage, then induction of premature labour should be withheld; but, if the head is found not to be engaged, or only engaging, repeated attempts should be made to cause descent as described above. Usually, from the thirtieth to the thirty-sixth weeks there is no difficulty in this, but sooner or later the manoeuvre will become more and more difficult until finally there is a doubt as to whether the head can be pushed down at all. If labour be induced at this time it will generally be found that it is unnecessarily easy, while the child will have been deprived perhaps of a further week of gestation. The best procedure is to wait until the head can just *not* be pressed down, and then to send the patient for induction immediately. In the majority of cases the labour will not be too difficult, and the child will have been given the maximum period of intrauterine life. The usual tendency is to induce labour too soon, in the fear that the head is too large, with the result that labour is much quicker than was expected.

In those cases where the head remains floating and incapable of engagement and descent before the thirty-sixth week, it is a question whether Caesarean section at term is not better treatment than induction of premature labour, and this alternative should be put before the patient.

In conclusion, I would urge ante-natal medical officers to look carefully for the slightest degrees of pelvic contraction, as it is these cases which are apt to go unrecognized and result in tedious labours at term, with a high rate of morbidity and a greater risk to the child's life.

PRIMARY SARCOMA OF THE PROSTATE: RAPID GROWTH FOLLOWING INJURY.

BY

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Cases of this rare disease are worthy of being recorded. The infrequency of its occurrence is demonstrated by the circumstance that out of the immense number of cases seen at the Hôpital Necker, in Paris, only one sarcoma of the prostate has been discovered. The disease was first described by Stafford in 1839, and in 1858 Thompson was able to discover only 6 cases; in 1902, by the research of Burckhardt, 24 cases in all were collected.

The case about to be described is of interest from a surgical point of view because of the disease, and from a legal aspect on account of the injury. The patient's wife obtained compensation in the Sheriff Court of Lanarkshire.

W. B., aged 35, was admitted to the Glasgow Royal Infirmary under my care on May 2nd, 1917. He then told me that prior to the accident on March 10th he enjoyed good health. On that day by a fall while he was at work in a pit he received an injury to the perineum and testicles. This caused difficulty in passing urine and slight bleeding from the urethra. He was treated by his own doctor till the beginning of May.

When admitted to the infirmary he was suffering from severe pain in the region of the bladder, and retention of urine which demanded the use of the catheter; the urine which was drawn off was alkaline, containing some blood, pus, and triple phosphates. He also showed symptoms of septic absorption. Rectal examination showed a round, smooth, soft enlargement of the prostate.

As the haematuria was severe, and the general symptoms alarming, I performed suprapubic cystostomy on May 9th, permitting a large quantity of decomposing urine to escape, while a considerable blood clot was also removed. This done the prostate was found to be occupied by a soft fungating growth which could be traced into a small cavity in the prostate. It had well-defined walls; the opening admitted my forefinger, and with it the tumour mass was easily removed; afterwards the cavity was curetted.

A portion of the growth was examined by Professor Teacher, and proved to be a round-celled sarcoma. A large drainage tube was inserted into the bladder, and free drainage established. This gave complete relief from pain, and the patient's general condition improved, but, although less profuse, the haematuria continued, and within a fortnight, when a second exploration was made, the tumour was found to have recurred, and to be of greater bulk than when the patient was admitted. As in the circumstances I did not consider myself justified in recommending cystectomy, he left the hospital at his own request on July 3rd, when the bladder was almost completely filled with tumour.

The case was a hopeless one, and by performing a radical operation the legal aspects would have been seriously complicated, my opinion being that prior to the accident there was a small encapsuled round-celled sarcoma in the prostate, which, if uninjured, would probably have remained quiescent for a long time. The fall caused a contusion of the perineum and the scrotum, showing that considerable force had been exerted on the parts. This force by being conveyed upwards would readily cause rupture of the capsule of a soft sarcoma in the prostate, but evidently was not sufficient to produce a rent in the mucous membrane of the bladder, hence no free bleeding was observed immediately after the accident. The capsule of the sarcoma being ruptured by the blow the tumour extended rapidly, and at the beginning of May penetrated the mucous membrane, and so bursting into the cavity of the bladder caused profuse bleeding with retention of urine.

Surgical treatment gave relief to the immediate symptoms, but the tumour, which was small when first noticed, rapidly increased while the patient was under observation, and within three months it practically filled the bladder. Soon afterwards the patient died from haemorrhage and exhaustion. A claim was made under the Workmen's Compensation Act and full compensation was awarded.

A point of clinical and pathological interest in this case is the effect of injury in inducing rapid extension of the sarcoma, and in this connexion I may quote a passage from *Tumours Innocent and Malignant*, by Sir John Bland-Sutton,¹ as applied to sarcoma of the mamma, where such tumours are more frequently met with than in the prostate:

In regard to sarcoma of the breast, there is a definite opinion held by experienced surgeons to the effect that there are many carefully observed and thoroughly reported cases in which primary sarcoma of the breast has quickly supervened on a single intensive injury. The sarcomatous nature of the tumours has been ascertained by a microscopic examination at the hands of a competent pathologist, and their malignant nature has been confirmed by the early death of the individual. It is undeniable that a single intensive blow or knock on the breast may be occasionally followed by a sarcomatous tumour.

Injury is now generally admitted by surgeons to be an etiological factor in carcinomata and sarcomata, but it is difficult to say what exact relation such injuries bear to the genesis of malignant neoplasms. The case here described appears to me to throw some light on the subject. Here we have a man enjoying what appeared to be perfect health; he receives a severe blow on the perineum, and two months afterwards I find the bladder occupied by a large fungating sarcoma, which protruded from a cavity in the prostate, the walls of which were well defined. That there was a well defined cavity showed that the growth had been encysted, and that it was not an infiltrating tumour to begin with. If the tumour had been caused directly by the injury the growth would have been diffuse, no

capsule having had time to form. It therefore seems reasonable to accept the view that the injury ruptured the capsule and caused the rapid spreading of the neoplasm. May this not also be true of traumatism as a cause of malignant disease elsewhere? Can the injury of a healthy tissue, independent of other factors, produce disease? I consider the answer must be in the negative. It is true that many diseases and tumours closely follow contusions, but the injured tissues are not healthy, there is some other element, known or unknown, of greater importance—organisms in tuberculous disease and in septic conditions, and probably small undiscovered tumours in malignant disease.

In America, Charles A. Powers,² M.D., of Denver, has made a careful study and analysis of the literature accessible to him and also gives a very complete list of references. He only discovered 22 cases of primary sarcoma of the prostate the histology of which has been demonstrated by microscopic examination. Including his own case the tumours were classified as follows:

Small round-celled	...	...	...	8 cases
Spindle-celled	...	...	...	3 "
Myxosarcoma	...	...	...	3 "
Spindle-celled and myxosarcoma	...	...	...	2 "
Small round-celled and spindle-celled	...	...	...	1 case
Angiosarcoma	...	...	...	2 cases
Adenosarcoma	...	...	...	1 case
Mixed celled	...	...	...	1 "
Large round-celled	...	...	...	1 "
Microscopically examined, but form not given	...	...	...	1 "
Total	...	...	...	23

The ages of the patients in the 23 cases classed as authentic are as follows:

0 to 15 years	...	...	...	13 cases
16 to 30 "	...	...	...	4 "
31 to 60 "	...	...	...	5 "
Over 60 "	...	...	...	1 case
Total	...	...	...	23

About a half of the cases were either round or spindle-celled growths, while the remainder were mixed tumours, and 56.5 per cent. were under 15 years of age.

Surgeons are agreed that primary sarcoma of the bladder is a very rare disease, but whether or not a clear distinction between tumours originating in the prostate from those arising in other parts of the bladder has been always made is difficult to say. Albarran found that out of 89 tumours of the bladder only two, on microscopical examination, proved to be sarcomatous.

Chassia Munves³ found that of 107 cases 75 were submitted to operation by one or other of the following methods:

Suprapubic	...	...	...	44 cases
Perineal incision	...	...	...	11 "
Urethral in women	...	...	...	9 "
Laparotomy	...	...	...	3 "
Sacral route	...	...	...	1 case
Vaginal route	...	...	...	1 "
Method not stated	...	...	...	6 cases
Total	...	...	...	75

The diagnosis of sarcoma of the bladder is very uncertain notwithstanding all modern methods of examination. The cystoscope cannot be relied upon to detect these tumours on account of their resemblance to carcinomatous growths, and because of the severe haemorrhage induced by the introduction of instruments into the bladder.

The only instance in which I have succeeded in diagnosing a sarcoma of the bladder, revealed by the cystoscope, was in a case where the tumour was secondary to "recurrent fibroid" elsewhere.

A man, aged 26, who had been operated upon several times for "recurrent fibroid," one on the knee, a second on the hip, and a third on the right lumbar region. When I saw him for the first time there were seven such tumours below the level of the waist, and one over the left shoulder in front. He complained of frequent and painful micturition, and had occasional attacks of haematuria. Cystoscopic examination revealed a rounded tumour on the anterior wall of the bladder. The surface was mottled bluish-red, and there was an irregular lozenge-shaped pale blue patch almost in the centre; over the surface there was a large number of small capillaries. The mucous membrane was deeply injected and the vessels dilated. In the circumstances an operation was deemed inadvisable, but a section of the tumour *post mortem* showed it to be a round and spindle-celled sarcoma.

Here the diagnosis was facilitated by the circumstances that (a) the tumour occupied the anterior wall of the bladder; (b) the mucous membrane covering the growth was intact; (c) haemorrhage was comparatively trifling; and (d) sarcomatous growths elsewhere were present. As a rule, the diagnosis can only be made by an exploratory incision.

Beyond the good effected by palliative measures to lessen the pain of retention little can be done in the way of treatment. A number of radical operations have been suggested and practised, but the results have not been encouraging. Sarcoma being an infiltrating tumour, by the time it comes under the eye of the surgeon no cure can be looked for from any operation which is not radical, consequently total extirpation of the bladder has been advocated, and has been performed in a considerable number of cases, but, as I shall show immediately, out of 69 operations we have only 3 instances of permanent cure. The cases in which a radical operation are indicated are very few.

1. The patient must have good general health, and strength to undergo a severe operation.

2. In the prostate the tumour must be still encapsulated, in the bladder it must be limited in extent, and there must be no evidence of metastatic deposits in glands or other organs.

3. There must be no ureteral obstruction, and the renal functions must be active and healthy.

In sarcoma of the prostate, so long as the tumour remains encapsulated, as it was in the case above described, prior to the accident, complete extirpation through the perineum may be possible. In fact, in this case, if the tumour had been diagnosed while the capsule was intact, the case would have been just the most suitable for a radical operation, but when the capsule was ruptured and the prostate had become infiltrated, it passed beyond remedy. For example, Socin, in 1894, removed through the anus and rectum, without injury to the urethra or bladder, a large encysted sarcoma, and the patient showed no evidence of recurrence three years thereafter.

In sarcoma of the bladder, as in primary growths in the prostate, as soon as the diagnosis is made the question arises, Is it advisable to remove the tumour? Many surgeons argue that, considering how rapidly the disease leads to a fatal issue when operative aid is withheld, together with the agony endured from retention, a suprapubic drain should certainly be established for the sake of the immediate relief given, and that if the indications are favourable, complete excision of the tumour, or even cystectomy, may be considered; in view of the very unfavourable results obtained up to the present time the latter operation cannot be recommended.

Statistics of 69 Cases in which the Results were stated (Munves).

Survived for a few days	...	...	...	21 cases
Deaths a few weeks after	...	...	...	11 "
Apparently cured for a short time	...	...	...	13 "
Cures followed by recurrence	...	...	...	15 "
No data	...	...	...	6 "
Permanent cures	...	...	...	3 "
Total	...	...	...	69

Rafin collected 30 cases of excision of the bladder with a mortality of 56.6 per cent., and of those who survived only two are recorded as permanently cured.

The only operation which prolongs life and gives immediate relief to suffering, at the same time involving no additional danger, is a suprapubic drain. On account of the haemorrhage following its employment the use of the catheter is contraindicated.

REFERENCES.

- ¹ J. Bland-Sutton, F.R.C.S., Cassell and Co., London, fifth edition, p. 278. ² *Trans. Amer. Surg. Assoc.*, vol. xxv, p. 213 et seq. ³ *Zeitschrift für Urologie*, vol. iv, No. 11.

THE Boston Medical and Surgical Journal of December 19th says that, according to estimates made by American public health services based on reports from States and cities where accurate records are kept, between 300,000 and 350,000 deaths were caused by influenza in the United States since September 15th. Public health officials believe that these figures are conservative. In the camps of the United States influenza, has been responsible for about 20,000 deaths, and 3,500 men who died of the disease on their passage across the Atlantic were buried at sea.