A CONTRIBUTION TO THE STUDY OF FIBROID TUMOURS OF THE VAGINA.

A Thesis for the Degree of M.D.

University of Edinburgh.

by

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The vagina or intermediate organ of generation in the female, extending from the hymen to the cervix uteri may at any time become the seat of tumour growth although with much rarer frequency in comparison with the external genitalia on the one hand and internal on the other. Apart from such conditions as cystocele, rectocele, prolapsus uteri, inversio and polypus uteri, vaginal tumours may be divided into two main groups, simple and malignant, the former being again subdivided into fibrous and cystic tumours.

It is under the category of fibrous or more correctly fibro-myomatous growths that the following case comes to be included.

M. H. age 30. housekeeper was admitted during the month of July 1904 into the Buchanan Ward in the Royal Infirmary Edinburgh complaining of "a swelling/

swelling in the privates." (It is of no little interest and importance from the standpoint of differential diagnosis to be referred to later on to quote from the letter brought by the patient from her medical attendant. He says "I am sending in a case who came to me a week ago saying she had piles. I examined and find prolapse of uterus with ulceration.") Nine months previous to her admission into hospital she had noticed a round swelling, red in colour about the size of a large plum. There had been no symptoms up till three months ago and patient discovered the swelling quite accidentally. Since October 1903 the lump had grown steadily and rapidly and for the last three months she experienced pain when she walked or turned herself in bed. During the last two years the monthly periods had been very irregular, the menstrual flow sometimes coming/

coming on every fortnight or three weeks. Previous to this menstruation had been perfectly regular every four weeks. For the last two months she menstruated at four weekly intervals but the flow was not excessive. She had also observed a yellow discharge from the swelling for three months previous to admission.

On enquiring into the sexual history of the patient, menstruation set in at the age of fourteen, type twenty-eight days, duration five days and quantity moderate. There was no history of amenorrhoea or dysmenorrhoea. As already stated menstruation had been irregular during the last two years, often occurring every three weeks and latterly the presence of a leucorrhoeal discharge was noted. Since the appearance of the swelling she had been compelled to make water more frequently but no pain or incontinence was experienced. The bowels were moved/

moved regularly under the influence of medicine.

Physical Examination of the Patient. - Inspection, palpation, percussion and anscultation of the abdomen revealed nothing of noteworthy importance. On examination of the External Pudenda the labia majora were observed to be small. A globular swelling as large as a cricket ball was noticed emerging from the vaginal orifice separating the labia minora and bulging for a couple of inches beyond the vulva. It was greyish pink in colour with a uniform surface except for three bosses which projected from its suface, two of them about the size of a marble and the other slightly smaller. The tumour measuring $5\frac{1}{4}$ inches round the circumference, 2 inches longitudinally, $1\frac{3}{4}$ inches transversely, was tense in consistence and not tender on pressure. The projecting mass was covered by mucous membrane which/

which had become eroded at one point leaving a round greyish area the size of a sixpence and coated with a greenish yellow secretion. A quantity of this secretion was also seen at the margins of the tumour and forming crusts on the labia and pubic hair. On vaginal examination the tumour was found to be attached by a broad base and springing from the left wall of the vagina just within the ostium vaginae and growing distinctly outwards. The labia majora and minora could be well defined and on the left and upper side of the swelling a reddish fold of mucous membrane was seen in front of the left labium minus which could be made out as part of the hymen.

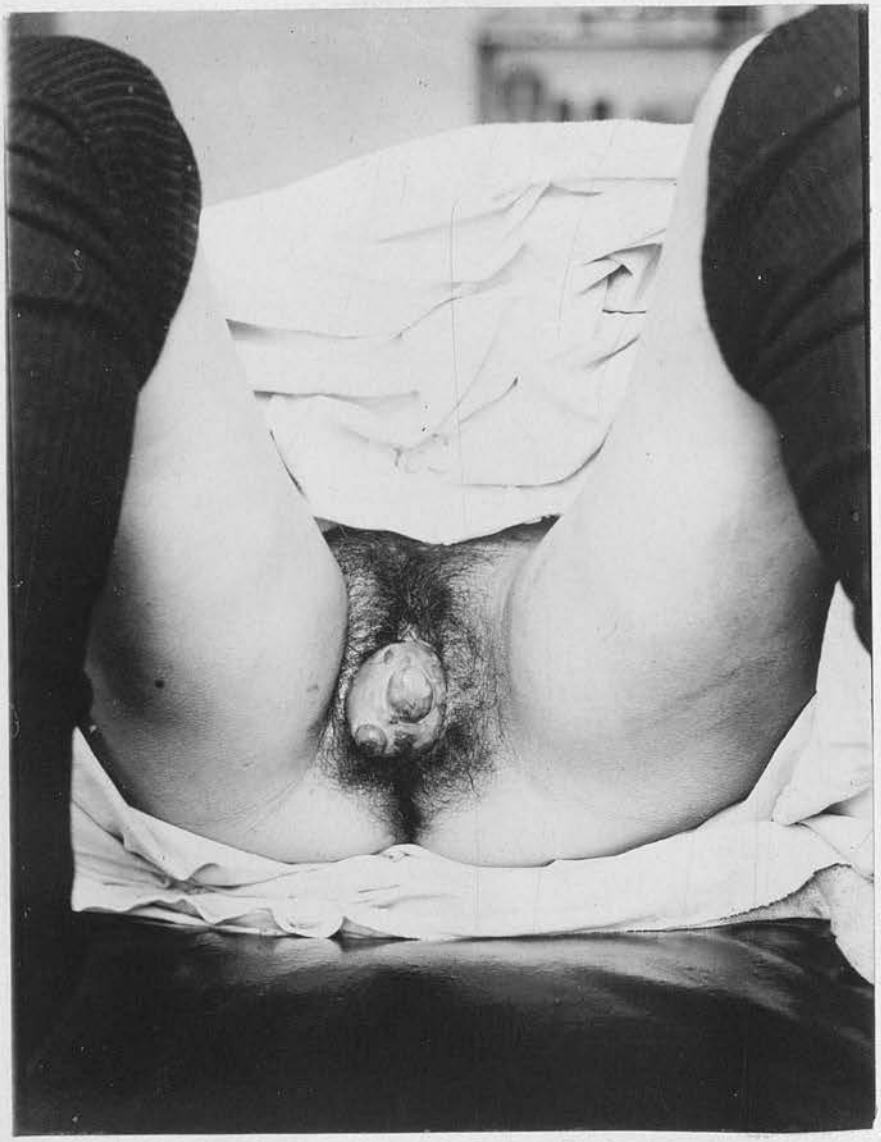
The tumour was free from all sides of the vagina except the left and the examining finger could be passed into the vagina beyond it, more easily above and to the right of the swelling. The cervix uteri was/

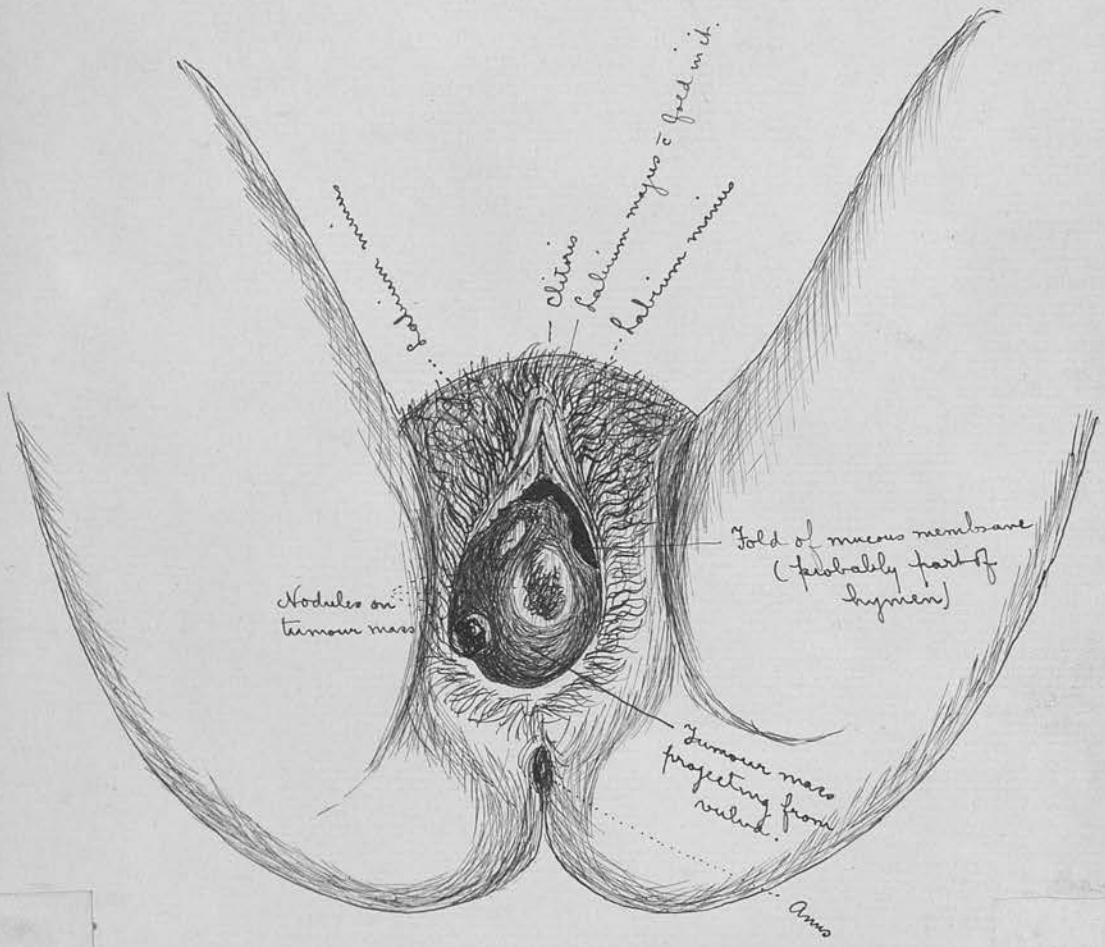
was small and the os that of a nulliparous woman small and circular, looking downwards and backwards.

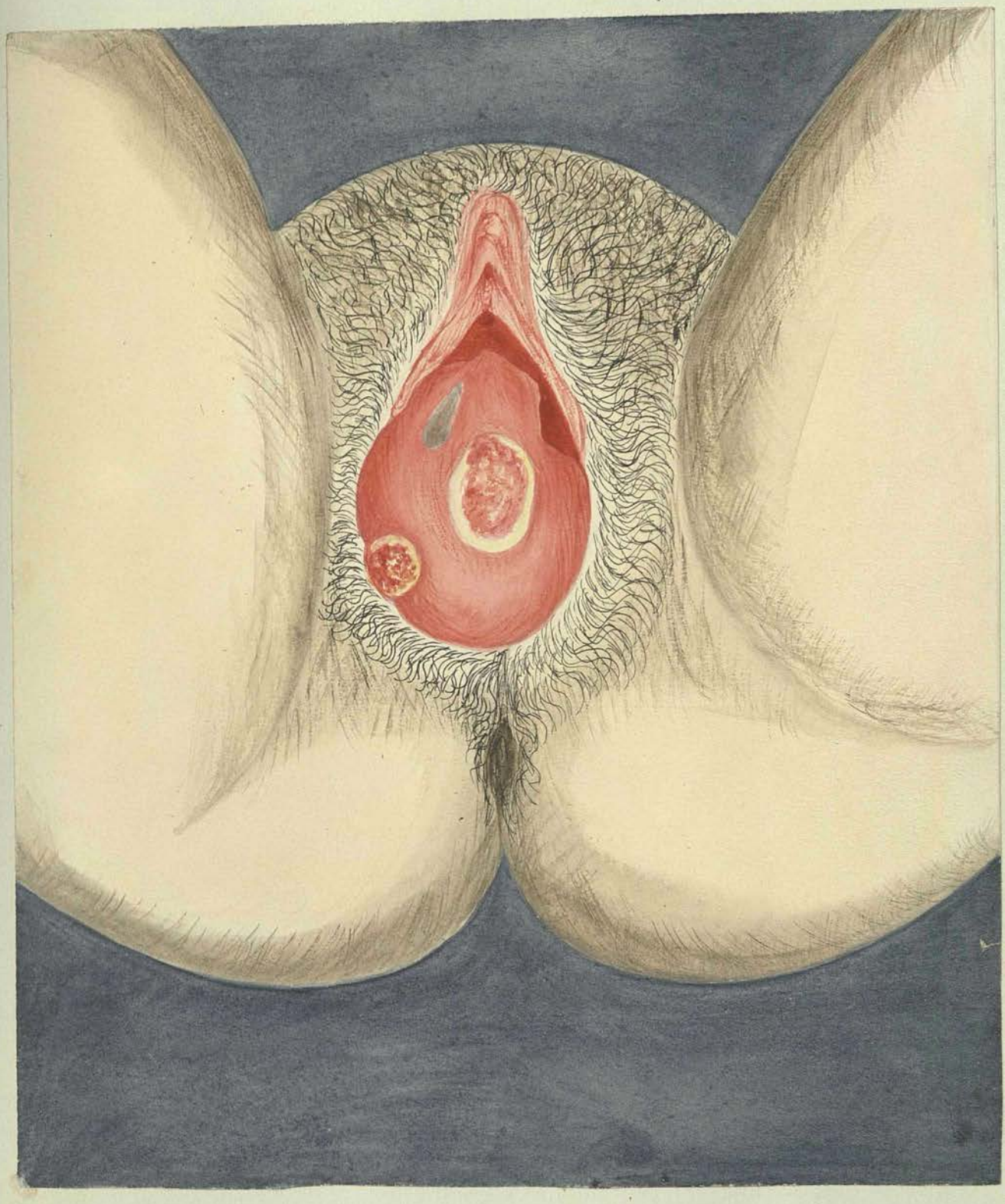
By whom treated? A

Operation. - The bladder and bowels having been previously evacuated the patient was anaesthetised and placed in the exaggerated lithotomy position. A large silver male catheter was introduced to ascertain the precise relation of the bladder to the tumour and kept in position during the operation with the aid of an assistant. The mucous membrane covering the tumour was incised vertically and dissected off backwards until access was obtained to the basal attachment of the tumour which was discovered to be occupying the left lateral aspect of the vagina. There was not much haemorrhage encountered until the base came to be enucleated when brisk bleeding ensued which was duly checked by forcipressure, the larger vessels being ligatured with/

with catgut. The little oozing which persisted was quite controlled by stitching up the raw area with catgut and the tumour capsule by means of a continuous catgut suture. The catheter was then removed from the bladder and the vaginal cavity douched with lysol. Iodoform gauze was introduced into the vagina and continued as a dressing applied externally and kept in position by means of a T shape bandage. The patient made a perfectly uninterrupted recovery and left hospital four weeks from the date of admission.




Labium majus & fold in it
Labium minus
Fold of mucous membrane (probably part of hymen)
Nodules on tumour mass
Tumour mass projecting from vulva
Anus



Pathology. Description of Slides accompanying Thesis.

The sections are made through the nodules projecting from the surface of the main tumour and which were of two varieties 1. Smaller and non pediculated and 2. Broad sessile. Slides I. and III. are cut through an example of the first variety and Slides II. and IV. illustrate the second variety.

On microscopical examination it is found that these nodules are not covered with mucous membrane. The vaginal mucosa stops short at the base of each nodule and is separated from it by a small fossa. The mucous membrane covering the rest of the tumour presents the usual characters of vaginal mucosa. The nodules project through it and on their surface is a condensation of necrosed tissue which appears to the naked eye like a prolongation of the mucous membrane. Below this condensed tissue and wandering/

wandering into it are a number of leucocytes.

Slides III. and IV. have been stained with Ehrlich's triacid to show the character of these cells. Most of them are polymorphonuclear leucocytes containing neutrophil granules. They are extremely numerous throughout the nodules and especially so immediately beneath the surface of necrosed tissue. Both kinds of nodules show this accumulation of inflammatory cells while the rest of the tumour where the surface consists of intact mucous membrane is quite devoid of them.

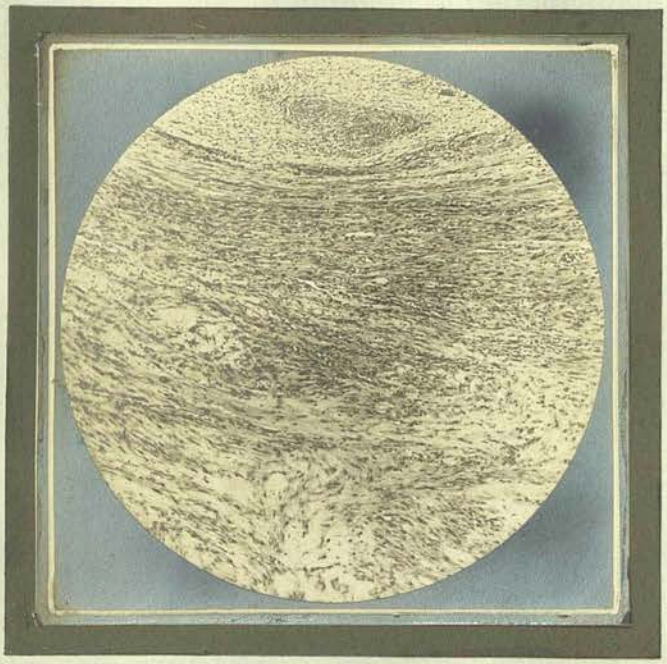
The main mass of the tumour consists of fibrous tissue intermixed more or less with plain muscle fibres. In some places the fibrous tissue predominates, in others the muscle cells are more numerous. On the whole, the two elements, fibrous and muscular, are fairly equally mixed with perhaps a slight predominance of fibrous tissue.

The/

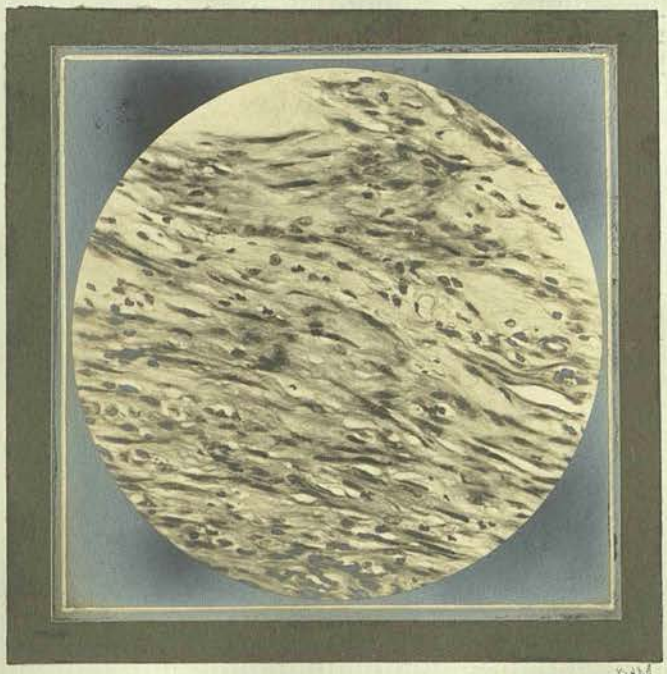
The nodules present a different appearance from the rest of the tumour. They appear to have grown through or eroded the vaginal mucous membrane, their projecting surfaces have become the seat of inflammatory reaction probably the result of chronic irritation and some of the tissue has necrosed to form a distinct membrane. Deeper down there is the accumulation of leucocytes and at the base of the nodule the tumour has undergone distinct myxomatous degeneration. The surface distinction between the projecting tumour tissue and the vaginal mucous membrane is very clear, the mucous membrane stops short and very abruptly while between it and the nodule is a distinct fossa at the base of which is a good deal of inflammatory reaction as evidenced by the number of leucocytes present there. The nodules are fairly vascular but no blood vessels are to be seen/

1. Photo-micrograph. At junction of the healthy and ulcerated surface of the tumour. The ulcerated surface is seen projecting above the epithelium and composed of an outer layer of fibrin which at parts is under-going organisation while below, the growth is of a myxomatous character. (XI2 diam.)

2. Ulcerated surface showing layer of fibrin with numerous new blood vessels; the myxomatous condition is seen in the deeper part. (X45 diam.)



3. At margin of tumour showing growth to be composed of bundles of fibro-myomatous tissue. (X45 diam.)



4. Shows characters of the tumour under higher power. (X200 diam.)

seen on the surface, being separated by a distinct layer of dense necrosed tissue.

In the year 1882 Kleinwächter ("Die bindegewebigen und myomatösen Neubildungen der Vagina." Zeitschrift für Heilkunde. 1882) collected some fifty cases from various sources to which he added three more including one that occurred in his own practice.

The following is an abstract of cases gathered from the literature of the subject since Kleinwächter wrote his dissertation leaving out of account any cases open to doubt and which together with the above recorded case number thirty-four in all.

The numbers in the text correspond with the appended list of references.

Bächer's[1] case. Patient age 47. 8-para. tumour size of a child's fist and attached by a pedicle to the anterior vaginal wall.

Brabury's[2] case. Patient age 38, married. Complained of having felt something give way while lifting a heavy tub, pain supervening and necessitating complete rest for some months. A pad was applied which kept the tumour in place and enabled the patient to carry on her work. This had occurred four years before. A year later the tumour began to grow suddenly, doubling itself in size in the course of six months. A large tumour about the size of a pear was discovered growing from the anterior wall and completely filling the vaginal canal. The mucous membrane was sloughing in places. The tumour was enucleated followed by brisk haemorrhage and the wound was closed with suture. Complete recovery noted./

noted.

Braun's[3] (G) case. Patient complained of pain on coitus. She was kept under observation for six months during which period the tumour increased in size from that of a pea to a grape. The tumour which was freely mobile was attached to the anterior vaginal wall.

Byford's[4] case. Patient age 35, married 10 years; sterile: growth noticed for twelve years, at first the size of a nut and situated just within the vagina on the anterior wall. Tumour continued to grow steadily, finally projecting from the vaginal orifice and causing great inconvenience. It became ultimately grangrenous, slight septicaemia ensued and the tumour was crushed. Similar tumour of uterus noted in same patient coincident with vaginal growth.

Cleveland's[5] case./

Cleveland's[5] case. Patient age 46, married one year 1-para. two abortions: menstruation regular associated with severe dysmenorrhoea. For two years patient had suffered from pain in the back, dragging pains in the legs and a free leucorrhoeal discharge. The tumour grew from the anterior vaginal wall. It was removed by splitting the mucous membrane and shelling out, the wound being packed. Secondary haemorrhage occurred and was controlled by sutures.

Da Costa's[6] case. Patient age 40 came to hospital with a large tumour separating and projecting beyond the labia. It arose from the anterior wall of the vagina and measured 6½ inches in length and 4 inches in breadth. Erosion on part projecting beyond orifice was observed and the tumour was removed by means of shelling out and closure of wound with sutures.

Donald's[7] case./

Donald's case[7]. Patient age 36. married ten years. One child. Menstruation had been very irregular for some years and latterly very profuse. High up on posterior wall and projecting into the vagina was a smooth, round, well defined mass about the size of a tangerine orange. Tumour removed by division of its capsule and shelling out. Menstrual disturbance ceased and general health much improved.

Microscopically the tumour presented the characteristics of a fibromyoma, the unstriped muscle fibres greatly predominating.

Emmert's Case. Patient age 46. married three times: six children. Three years before she had felt a dragging sensation in the pelvis and examination revealed a tumour growing from the anterior wall of the vagina. Tumour was enucleated, weighing $1\frac{1}{4}$ lbs. and measuring 4 inches in length and $2\frac{2}{3}$ inches in diameter./

diameter. Hard to the touch and microscopically composed of fibro-muscular elements; evidence of fatty degeneration was present.

Fränkel's case[9]. Reports a polypoid tumour the size of an orange removed from the posterior vaginal wall.

Geuer's case[10]. Patient age 46, nullipara. Fibroma, size of the fist and shaped like an hour glass growing by a broad pedicle from the anterior wall of the vagina. Patient had only observed its presence six weeks before removal and only experienced slight incontinence of urine four weeks. Tumout was removed and wound closed with sutures.

Godfrey's case[11]. Patient age 35. several children. Tumour of two years standing attached to the anterior wall of the vagina, completely filling the vagina and projecting from the vulva. Growth more rapid during last two months. It interfered with coitus

and/

and patient complained of frequent and painful menstruation with pain in the back. Tumour removed by incising mucous membrane and dissecting out, wound being packed. Microscopically the tumour was fibro-myomatous in character.

Greene's [12] (C.M.) case. Patient age 51, married two children, seven years beyond the menopause. For ten years she had observed a small swelling which had grown steadily to the size of a hen's egg. There were no haemorrhages and no discharge. For three months there had been frequent and painful micturition. Tumour which was attached to the anterior vaginal wall was enucleated and cavity packed with gauze; microscopically, presented appearance of typical fibro-myoma.

Hasenbalg's [13] case. Patient age 49; single: menstruation increased for last two years accompanied by leucorrhoeal discharge. Tumour the size of an/

an apple attached to the posterior vaginal wall. Removed by application of ligatures and cutting away.

Hastenpflug's[14] cases. Two in which the tumour was quite small, arising from the anterior wall of the vagina and easily removed. A third case presented a larger tumour, pediculated, also growing from the anterior wall. The pedicle was ligatured and divided.

Hofmokl's[15] case. Patient age 49. 3 children and one abortion, menstruation irregular. Tumour about the size of a child's head growing from the anterior wall of the vagina: removed by means of an elastic ligature. Microscopically the tumour appeared to be made up of fibrous tissue.

Hume's[16] case. Myomatous tumour removed from anterior vaginal wall. Haemorrhage had been severe and frequent attacks of retention of urine called for the use/

use of the catheter. The growth filled the vagina and projected beyond the vulva. Removed by enucleation, severe haemorrhage occurring and controlled by means of tampons.

Kerr's, Munro case[17]. Patient age 25 single. Extreme dysmenorrhoea of many years duration. Hard solid swelling felt growing from anterior wall of vagina which was removed by enucleation and the wound stitched with catgut sutures. Microscopically it presented the features of an ordinary fibro-myoma.

Lewer's case[18]. Patient age 37. six children, menstruation latterly irregular: leucorrhoeal discharge and pain in the back for several years. The tumour which grew from the anterior wall of the vagina measured 1½ inches anteriorly and 1¼ inches transversely. The tumour was removed with scissors and on microscopical examination presented the appearances/

appearances of a fibroid tumour.

Maury's case.[19] Patient age 40. one child: history of haemorrhages latterly. A tumour of large size involving the entire anterior vaginal wall was enucleated and the incision closed with sutures. The growth was 3 inches in length, $2\frac{1}{2}$ inches wide and weighed 4 ounces. Microscopically presented characteristics of a fibro-myoma.

Meinert's case.[20] Patient age 71. Polyp of the form and size of a hen's egg growing from the posterior vaginal wall and which gave rise at times to severe haemorrhage, necessitating removal.

Netzel's case.[21] Patient age 45. married 15 years: nulliparous: menstruation regular. Had observed tumour for five years: rate of growth slow. On examination a tumour the size of a hen's egg was found situated in the posterior vaginal wall.

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The growth which showed fibrous but no myomatous tissue was removed by operation.

Olenin's case[22]. Patient age 32. who had been the subject of twin pregnancy fourteen years previously had sixteen myomatous tumours removed from the vagina at several sittings, some pedunculated and some sessile; the largest being the size of a fist, two as large as a hen's egg and the rest smaller.

Oliver's case[23]. Patient age 32 married 13 years, seven children, menorrhagia, some difficulty in micturition. On examination, vagina found to be distended by swelling the size of a small cocoanut situated in the anterior wall of the vagina and sessile. Mucous membrane incised and fibroid tumour enucleated. A fibroid tumour of the uterus was also found to be present on further examination after removal of vaginal growth.

Phillip's J. cases[24]./

Phillips'[24] J. cases. I. Patient age 36. no children: pain during coition. On examination a tumour the size of a walnut was discovered growing from the anterior vaginal wall and removed by enucleation, cavity being closed by means of deep and superficial sutures. Microscopical examination revealed tumour to be partly myomatous and partly fibrous, the latter predominating.

Case 2. Patient age 49. unmarried: complained of something pressing upon bladder; later, offensive discharge. Examination revealed growth projecting from anterior vaginal wall. Removed by incision of vaginal mucous membrane covering growth and shelling out of tumour which was accompanied by free haemorrhage. Microscopically, tumour presented appearances similar to those observed in uterine fibroids - a mixture of fibrous and muscular elements.

Smith's[25] case. /

Smith's case.[25] Patient age 66. married 45 years, seven children: pain in back and rectum with constipation: occasional difficulty in micturition, requiring use of catheter: coitus latterly impossible owing to excessive pain. On examination a tumour the size of a fist was found growing from the posterior vaginal wall. Tumour removed by incision and peeling out with scissors and fingers accompanied by profuse haemorrhage controlled by packing of cavity with gauze. Microscopical examination revealed small amount of fibrous tissue with a large amount of vascular myomatous tissue.

Strassmann's cases[26] 1. Patient age 41. married eighteen years: sterile: menstruation normal: Slight pain experienced between rectum and vagina attributed to swallowing of a pin previously. Examination revealed two hard bodies, the size of lentils/

lentils lying near each other on the posterior vaginal wall. Mucous membrane was incised and tumours removed without haemorrhage. Both tumours showed calcareous degeneration.

Case 2. Patient age 34. unmarried: occasional leucorrhoeal discharge: some soreness and difficulty in walking. On examination a soft tumour attached by a broad pedicle to the anterior vaginal wall was discovered. Mucous membrane was incised and tumour removed. Microscopically, fibro myomatous in character.

Swayne's case.[27] Patient age 37. multipara: no dysmenorrhoea or menorrhagia: for six months vaginal discharge, latterly offensive: dyspareunia. On examination, a hard, rounded, non-pedunuculated tumour was felt projecting from the anterior vaginal wall Removed by elliptical incision. Microscopically, tissue in which myomatous elements largely/

largely preponderate.

Targett's case.[28] Patient age 34. single: vaginal discharge for three months, latterly becoming offensive . Examination revealed tumour growing from the anterior vaginal wall. Removed by shelling out and closing with sutures. Microscopically, fibro-myomatous in character.

Wernitz's case.[29] Patient age 49. nine children, last born seven years ago. Complained of prolapse of the womb. On examination a tumour the size of a goose egg was found growing from the anterior vaginal wall. Tumour was shelled out and wound united by means of sutures. Microscopically, composed chiefly of connective tissue.

Etiology. The condition is one comparatively rarely met with but at the same time several existing cases may never have been put on record, partly on account of their not having been diagnosed as such or through not having attained sufficient size to warrant their discovery. It is one of those conditions which might be diagnosed quite accidentally and care should be taken to ascertain that they are not merely cystic developments. Roger Williams draws attention to the fact that although the vaginal musculature is much thinner than that of the uterus, in other respects there is much similarity between them, except that the former lacks the post-embryonic developmental potentiality of the latter. It is owing to this functional difference and consequent diversity in the number and arrangement of its blood-vessels, that myomatous tumours arise so very much less frequently/

frequently from the vaginal than from the uterine walls. The musculature occupies an intermediate position in the vaginal parietes, between the corium of the "mucosa" and the fibrous tissue of its outer coat, to both of which it sends processes. It is most abundant in the lower part of the vagina, especially anteriorly in the vicinity of the bladder and it is significant that these are the commonest localities where vaginal tumours are most liable to develop. Blood-vessels, nerves and lymphatics also enter into their composition. Fibroid tumours of the vagina may arise in the submucous or peri vaginal connective tissue or in the muscular coat of the vagina. Occasionally a fibroid tumour in the recto-vaginal partition may have been originally a uterine fibroid that has developed downwards in the same way as a true vaginal tumour. Veit holds the/

the view that many of the vaginal tumours have their source of origin in connection with Wolffian "rests" but the actual cause that produces them as in the case of their uterine congeners still remains obscure, although the possibility of remnants of Gartner's duct giving use to tumours in the vagina just as they do in the cervix should not be left out of account.

In the majority of cases fibroid tumours of the vagina may be said to occur during the later sexual period towards the menopause. Thus in the thirty four cases noted where the age of the patient is given at the onset, we find two cases occurring between the ages of twenty and thirty, eleven between the ages of thirty and forty, eleven between the ages of forty and fifty and in three cases above the age of fifty.

The/

The most frequent site of growth has been the anterior vaginal wall, a much smaller proportion growing from the posterior wall and in only one instance has the lateral wall been the seat of election.

Analysis of the thirty-four cases noted where the site is given shows twenty-five situated in the anterior wall, seven in the posterior and one in the left lateral wall.

In size they may be as small as a pea, others again reaching the size of a foetal head or even more weighing up to ten pounds. The largest on record weighed ten pounds two and a half ounces, the tumour in this instance hanging like a large flask from the vagina by a pedicle two fingers thick. Their growth is as rule slow and may extend over a number of years.

Pathology in General. Fibroid tumours of the vagina may be classified under three chief heads according as they are composed entirely of connective tissue, the purely fibroma type, muscular tissue, the purely myoma type, or where a combination of these two types exist, the fibro-myoma. All three types have been described as actually occurring but the most common is undoubtedly the fibro-myomatous. The connective tissue as seen in accompanying slides is generally found interwoven with a greater or lesser amount of unstriped muscular fibres and according to the predominance of the connective tissue or muscular fibres, the tumours are harder or softer. Originally globular sessile tumours imbedded deep in the wall of the vagina and not infrequently broad-based, as they increase in size and accordingly in weight they have a tendency to become/

become pediculated forming a polypoid projection from the vaginal wall and may protrude through the vulva. All pediculated forms have probably been sessile in the early stages of their history.

In all cases with the exception of two, those of Olenin and Strassmann, the tumours were all single.

Degenerative Changes. Fibroid tumours of the vagina may undergo changes not unlike those seen in fibroid tumours of the uterus such as softening by accumulation of serous fluid in the network of their interior. The most common of the superinduced changes met with are those resulting from septic infection and similar to those described in recorded case. At first the presence of simple congestion and oedema with imflammatory changes going on to necrosis and gangrene of the vaginal mucous membrane covering the tumour. Calcification was present in the case of Strassmann's patient who had a year and a half before swallowed a pin and for some months had experienced a stabbing pain between the vagina and anus which she attributed to the point of the pin. On examination, immediately beneath the mucous membrane of the vagina a lobulated hard body, the size/

size of a lentil, was felt, which on enucleation was found to be a fibroid undergoing calcification and in no way connected with the pin. In the case recorded by Hofmokl the tumour was aspirated and pure blood withdrawn, and on removal of the tumour there was found a round cavity with rough walls of fibro-myomatous tissue. Hofmokl considered this an instance of a true haematoma. In a case described by Emmert the tumour was found microscopically to be of a fibro-muscular nature with distinct evidence of fatty degeneration.

Malignant degeneration is found to be extremely rare, sarcomatous changes having been reported by Homs and Cartlege and myxomatous changes by Kleinwächter and Péan.

Associated Conditions.

Kiwisch held the view that most of the vaginal fibroid growths originally arose from the uterus, subsequently losing their connection with that organ but this is denied by Kleinwächter and others.

Byford reports a case where a fibroid tumour of the vagina and uterus co-existed in a woman thirty-five years of age who had been married for ten years without becoming pregnant. She had noticed the growth for twelve years. At the time it was first noticed it was about the size of a hickory nut and situated just within the vagina. It had grown steadily and finally protruded from the vagina, causing great inconvenience. It became gangrenous, slight septicaemia followed and the tumour was crushed. It was attached to the anterior wall of the vagina. Further examination revealed a protuberance about the/

the size of a goose egg upon the anterior surface of the uterus and Byford notes the following points of interest in connection with his case. The occurrence of both tumours in the same person and the slow growth of the vaginal as compared with the uterine tumour. The presence of sloughing of the capsule of the vaginal tumour after protrusion and the lack of sensitiveness of the tumour.

In another case described by Oliver a fibroid tumour was discovered in the uterus after the removal of the vaginal growth.

Symptoms. In a certain number of the cases recorded the projection of a tumour at the vaginal orifice has been the first indication of the presence of disease, and this more than any special prevailing symptoms has led the patient to seek advice. Moreover any symptoms must in great measure naturally vary according to the size, exact situation and rate of growth of the tumour. Small tumours may cause no trouble and may be discovered quite accidentally. Larger ones on the other hand may give rise to a feeling of weight and distinct discomfort, a dragging sensation in many cases being felt. Most inconvenience appears to be caused where, owing to the size and situation of the tumour, surrounding structures become involved, notably the bladder and urethra giving rise to micturition troubles. Thus we find frequency of micturition accompanied/

accompanied with actual pain present in a large proportion of cases, less frequently retention or incontinence. Rectal symptoms are as a rule conspicous by their absence, no case of actual obstruction to the bowel being reported. Dyspareunia is noted in some of the recorded cases and would depend to a very great extent on the size of the tumour as evidenced in a number of the cases where no mention is made of this symptom in all probability due to the comparatively small size. The effect on menstruation must be regarded as slight. In some cases increase of the flow was noted, in two metrorrhagia was present, possibly due to irregular bleedings from the ulcerated surface of the tumour. A chronic leucorrhoeal discharge is present in a large proportion of the cases, in the more oedematous tumours/

tumours the discharge being serous in character, more foetid where gangrenous changes had taken place. With regard to conception, the liability appears to be unaltered and pregnancy has no apparent effect on the growth of the tumours; some of the largest tumours having been present in association with pregnancy. If the tumour be of a large size it may cause formidable obstruction in labour and indeed this may be one of the most serious complications. Kleinwächter has reported a case where Caesarean Section was performed to relieve the condition. Complications during the puerperium have also been noted such as sloughing of the tumour itself or of the vaginal wall, producing a vesico-vaginal fistula.

Diagnosis and Differential Diagnosis.

In the diagnosis of all tumours of the vagina, the proclivity of this part of the body to give rise to localised invaginations and prolapses should be borne in mind. Thus in many cases prolapse of the anterior wall (cystocele) or posterior wall (rectocele) may at first sight simulate fibroid tumours. In all cases the relation of the bladder and urethra should always be carefully ascertained by the passage of a sound. Simple cysts of the vagina more especially when circumscribed, thick walled and tense may be mistaken for a fibroid tumour, fluctation often being very deceptive as this may be found to some extent to be present in a very oedematous fibroid and the value of tapping must not be overlooked in such cases. Various uterine tumours, more

especially/

especially the pediculated subserous fibroid tumour, prolapse and inversion of the uterus are among the more common conditions which might be mistaken in diagnosing such cases. In the case of the pediculated fibroid tumour of the uterus the diagnosis would be established by a careful examination by the bi-manual method which would reveal the uterus enlarged, further identified by the passage of the uterine sound and in addition the growth would be found projecting through the cervical canal and having no direct point of origin with the vaginal walls. Prolapse of the uterus a condition also not unlikely to be mistaken especially at first sight as instanced in the case recorded where the patient's doctor sent her in "having examined her and found prolapsus uteri". Enquiry into the patient's history and occupation, the/

the fact of whether she had borne any children or not as well as the local examination should enable one to differentiate between the two. In the case of prolapsus uteri protruding beyond the vulva the external os would be visible, the uterine cavity enlarged on passing the sound and it might be further possible by replacing the prolapsed organ to note exactly the condition. In the case of a fibroid tumour of the vagina, on vaginal examination the uterus could be felt above it and not enlarged.

The possibility of malignancy in view of some recorded cases of sarcoma of the vagina having been met with can always be eliminated by subjecting a portion of the tumour to microscopical examination.

Prognosis must be regarded in the majority of cases as favourable. When the tumour is of small size it generally gives rise to no trouble. The possibility of rapid growth setting in at any time and giving rise to more or less distressing symptoms from pressure, inflammation arising and sloughing changes taking place, malignant degeneration (rare), septicaemia following on prolonged suppuration should be borne in mind as such conditions will in all cases call for some form of active interference.

Treatment. In considering the treatment to be followed in cases of fibrous growth of the vagina, much will depend on the size, precise situation and prevailing symptoms. If the growth be small in size and not of rapid growth or even quiescent no operative interference is required.

On the other hand when such a growth continues to steadily increase in size or become pediculated, when it interferes in any way with the performance of natural functions or begins to shows signs of septic mischief such as sloughing, then the sooner surgical measures are adopted the better.

In all cases before commencing any form of operation it is well to pass a sound into the bladder to ascertain the exact relations of the tumour to the bladder and urethral canal and thus avoiding injury to either or both during operation. If the tumour/

tumour be pediculated various measures have been advised for its removal. Torsion of the pedicle has been suggested but must be regarded as not free from the risk of including a diverticulum of bladder or rectum according to the situation of the tumour and in consequence the establishment of a vesico - or recto-vaginal fistula. Cauterisation of the pedicle may also be mentioned as a not ineffectual measure of checking all possibility of haemorrhage both at the time of operation and subsequently. The pedicle is however best secured by means of a ligature. This may be carried out by passing a thread of silk or catgut round the pedicle, tying the same securely and then cutting off with scissors. The most secure method is to transfix the pedicle with a needle threaded with a strong double silk ligature which is cut in the middle and the two halves crossed and tied on/

on either side when they become interlocked like the links of a chain. The pedicle is then divided by scissors and this method secures against the possibility of any further haemorrhage taking place from the stump.

In cases where the tumour is broader based and sessile enucleation must be had resort to as in the case recorded. If the tumour be situated in the anterior wall of the vagina it will be found of great service to retain a catheter in the bladder throughout the operation and a bougie in the rectum if the tumour be attached to the posterior vaginal wall. A curved incision is made over the longest diameter of the tumour dividing the capsule of mucous membrane circumscribing it which is left attached and enucleation of the tumour proceeded with. The shelling out of the tumour is best carried out by/

by means of the finger or blunt end of a bistoury. Finally it may be necessary to divide the structures at the base of the tumour when haemorrhage, often severe, should be controlled by means of forcipressure and any large vessels ligatured. After removal, all bleeding points having been secured, the edges of the wound are brought into careful apposition by means of a deep continuous silk or catgut suture. If it is found impracticable to bring the edges of the wound thus together or if the thermo-cautery be employed in the removal of the growth, the cavity should be simply plugged with iodoform gauze and allowed to heal by process of granulation. In cases where the tumour has attained large dimensions it may require removal by morcellation. The chief dangers to guard against are injury to structures in the neighbourhood and/

and the possibility of recurrent haemorrhage owing to insufficient control of the haemorrhage during the operation.

In cases complicating pregnancy, if the tumour is of large size and likely to cause trouble during labour through obstruction, its removal should be carried out regardless of the pregnancy, on the other hand if the tumour be of small size and not increasing to any extent throughout the pregnancy, no treatment is necessary but in the interests of the patient it would be well that the size of the growth should be ascertained from time to time in view of future pregnancies.

Summary and General Conclusions with Observations.

Fibroid tumours of the vagina differ from those met with in the uterus in being comparatively much rarer and , with the exception of two recorded cases, are always found single. They also tend to occur on an average at a corresponding period of life. Usually of slow growth especially in the earlier months, they may at any time rapidly increase in size. Their usual seat of election is the anterior wall of the vagina and in the majority of cases are met with in the sessile form though occasionally pedunculated. Associated with the condition in two cases fibroid tumour of the uterus was found to co-exist. The fact that the fundamental structure of the walls of the uterus and vagina is in many respects similar, being composed of fibrous and muscular tissue, the muscular/

muscular tissue of the vagina being much the thinner of the two, one is inclined to ask if fibroid tumours of the vagina bear any relation to uterine fibroids. The fact has already been mentioned that in only two cases of those collected from the literature on the subject have uterine and vaginal fibroids been found to co-exist. Furthermore, if the irritation theory so-called be at all held as a factor in the causation of fibroid tumours of the uterus, then one would expect that the vagina exposed to infinitely greater irritation then the uterus would be the more frequent seat of the disease which it is conclusively not. It may be that the developmental potentiality of the uterus in contrast to that of the vagina and the consequent diversity in the number and arrangement of the blood vessels goes to account for the greater/

greater frequency of fibroid tumours of the uterus. The fact that the muscular tissue of the vagina preponderates in its lower part especially anteriorly in the region of the bladder may have some bearing in the greater frequency of vaginal fibroids in the anterior wall. In contrast also to uterine fibroids it is also worthy of note that vaginal fibroids are in most instances single. Further in women who are the subjects of fibroid tumours of the uterus sterility is much more common, the disease in this situation interfering mechanically with the process of fertilisation and development of the foetus in utero. From investigation into the cases where women were the subjects of vaginal fibroid growths it is worthy of note that they are apparently no more prone to sterility than others, the only possible practical factor which might/

might account for sterility being the fact that coitus would be interfered with and that the spermatozoa would fail to reach the uterus. The effect of vaginal fibroids on menstruation and conception is practically negative, pregnancy goes on uninterruptedly, but the tumour if of large size may lead to serious difficulty in the course of labour.

The symptoms depend altogether on the size and situation of the tumour and are as a rule most troublesome when due to the effects of direct pressure on neighbouring organs. Degenerative changes have been noted in some instances and of these sloughing is by far the most common change that takes place.

The essential treatment which carries with it the best results is undoubtedly surgical. It consists in/

in complete enucleation followed by deep and superficial suturing of the wound, and where the latter is impossible recourse must be had to packing of the sac with gauze and the wound allowed to heal gradually.

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