ever, from sarcomata as we know them in the human subject in many respects.

In the first place they are in the highest degree contagious, and the contagion may apparently be conveyed, although there are no growths visible at the time. The dog C. was carefully examined at the time of serving both bitches, and showed no evident signs of growths. In the next place they show a very slight degree of malignancy. There is little or no infiltration of surrounding parts, and it is very rare to find metastatic deposits; there is also little tendency to ulceration. Again the growth is very slow; both these cases were of over a year's duration. If we consider the mammary tumour in the bitch A to be a metastatic deposit—and, except for the formation of fibrous tissue, the structure was identical with that of the vaginal growth—we have the remarkable fact that the bitch was permanently cured by the removal of both primary and metastatic growths. In all these respects these growths differ from sarcomata as we know them in man. On the other hand they have some analogies with the infective diseases, such as the high degree of contagiousness and the long incubation period. The contagiousness of these growths has been used as an argument in support of the theory of the parasitic causation of malignant disease, but I do not think that we can safely draw any conclusions from them at present. The fact that the growths are contagious does not necessarily imply that they are due to parasites, since the infective agents may be the tumour cells themselves. The fact that the growths cannot be transferred to any animals except dogs points to the conclusion that the transmission is an example of transplantation rather than of infection. I am informed that the growths are occasionally inherited, and that they may then appear in maiden bitches. The subject is one of great interest, and deserves further study.

I am indebted to Mr. J. R. Anderson, the owner of the dogs, for the opportunity of examining these specimens, and for permission to publish them.

REFERENCE AND NOTE.

¹ Infective Venereal Tumours in Dogs, *Journ. Path. and Bact.*, 1898, vol v, p. 99; ² Infective Sarcomata in Dogs, *BRITISH MEDICAL JOURNAL*, 1898, vol. ii, p. 1807. ³ Although I describe the growths as situated in the vagina, yet in both cases they were situated posterior to the urethral orifice, so that the urethra was not seen during the operation.

AN UNUSUALLY LARGE PYOSALPINX.

By MAY THORNE, M.D.,

Late House-Surgeon, New Hospital for Women.

History.—M. P., aged 24½, a parlourmaid, came to me on February 10th, 1902, stating that for a week she had had difficulty in passing urine, and that for a day or more she had passed none. She had been in her usual health till the morning of February 3rd, when she had been reaching above her head to hang up some curtains. She had felt a sudden pain low down in the left side of the abdomen, which continued as a dull pain for some hours. She was sick in the afternoon, and had to go to bed. Slight sickness continued for the next two days, and on the same two days she passed very little water, though she had much desire to do so, especially when lying down. The little water she was able to pass on straining scalded her much. She had slept badly all the week, had had no appetite, and was feeling ill. She looked pale and weak, and though she said she had no great pain, she complained of the whole abdomen being uncomfortable. Of past history the only points of note were that she had had pain and a good deal of loss at the periods from puberty, and frequently had had to go to bed at those times on account of the pain, and that at Christmas, 1901, she had had partial retention of urine for a few days. The periods had always been regular, and she stated that she had never at any time had any vaginal discharge, or any abdominal pain except at the periods.

State on Examination.—The lower part of the abdomen was rounded, prominent, and dull on percussion. A catheter was passed, and 44 oz. of dark-coloured urine drawn off, which was acid and contained nothing abnormal. The abdomen was tender to palpation and I made nothing out from it. Per vaginam there was old laceration of the hymen, the vagina short, and the posterior wall bulging into it, pushed forward by a round, firm, smooth tumour, which was pressed down into the pelvis. The cervix was at the apex of the vagina in the front, firmly compressed against the pubes. By insinuating a finger between the cervix and pubes I felt what I took to be the uterus pushed over to the right side and lying on the surface of the rounded tumour. Per rectum the same mass was felt, but no further information was gained. I endeavoured to push the mass up out of the pelvis, but did not succeed.

The patient returned on February 13th, and said she had passed her water easily, but that she had had more pain that morning. On examination the bladder was more distended than before, and 1 gall. 8 oz. of urine were drawn off, which was healthy. The abdomen was less tender, and an indefinite mass could be felt rising out of the pelvis, and also on the right side in the renal region. The uterus was easy to define, and the sound passed the normal length and a little to the right.

No fluctuation was felt in the tumour then, which was, as before, tightly fixed in the pelvis. I decided that I must operate as soon as possible, but that it would be desirable to get the bladder into better working condition before doing anything. She was therefore sent to bed, and the urine was drawn off three times daily. After a couple of days the abdomen was much easier to examine, and it was possible to feel that the tumour in the lower part of the abdomen was one with that in the pelvis, and that there was a second mass higher up on the right side apparently continuous with the lower tumour. Per vaginam fluctuation could now be obtained, and on the extreme left of the tumour, against the pelvic wall, an irregular mass was felt on the surface of the tumour, suggesting the left ovary. No ovary or tube could be made out on the right side. The uterus was lying on the top of the pelvic mass, and was felt abdominally, reaching just above the pubes to the right side.

Differential Diagnosis.—At first the firm round tumour, together with the patient's history—profuse loss and pain at periods—suggested a fibroid, but the fluctuation felt later suggested the mass was cystic. The history of sudden incarceration, too, made me think it was probably an ovarian cyst which had dropped back when the patient was reaching up. I felt very doubtful what the higher mass to the right was, and thought of the possibility of a renal tumour in addition to the pelvic tumour, but there seemed to be a connexion between the two masses. The urine had diminished from 88 oz. in the twenty-four hours to 36 oz., but none was passed naturally.

Operation.—On opening the abdomen the very hypertrophied bladder presented in the lower part of the wound lying in thick folds. The mass on the right side just below the liver was somewhat of a kidney shape, and attached to the right side of the uterus by the very thickened and varicose Fallopian tube. The tumour was felt to be a dilatation of the tube, and on following it down it was found to be continuous with the pelvic mass. There were a few thin adhesions above to intestine, which were readily broken down, but the lower mass was firmly adherent to the floor of the pelvis. On entering a trocar and cannula thin non-offensive pus came away; 35 oz. were caught and some 10 oz. or so lost. The right tube was tied off near the uterus and the upper mass lifted out. The left ovary and tube were densely adherent to the left side and front of the pelvic mass. The tube here was very much thickened by chronic inflammation. This was also tied and cut. The pelvic part of the tumour took a long time to remove, it was deep in the pelvis, and very difficult to peel off from the peritoneum of the lowest extremity of the pouch of Douglas.

There was very little bleeding throughout the operation. The pelvis was sponged out thoroughly with salt solution. A double strip of iodoform gauze was pushed to the bottom of the pouch of Douglas, and left as a drain for 24 hours. The wound was closed in three layers.

The specimen consisted of the largely dilated right Fallopian tube, which measured when *in situ* about 10 in. from above down, and about 12 in. in circumference in its largest part; the right ovary, and the left very thickened tube and ovary. The left tube was firmly closed by dense adhesions. The wall of the tumour was smooth, except where the adhesions had been torn off. No ulceration of any kind was seen in the interior.

Both ovaries were large and soft, the right one riddled with cysts, and no true ovarian tissue left. The left ovary was bound up in adhesions, which were dense and thick. The patient bore the operation well, and after 48 hours was able to pass her water naturally. She made an excellent recovery.

I think the great interest of this case lies in the absence of any symptoms pointing to salpingitis. The patient had never had any attacks of abdominal or pelvic pain apart from the commencement of each menstruation, and then the pain had never kept her in bed for more than a few hours or half a day. At times she had not even had to lie down. There had never, according to her statement, been any vaginal discharge apart from menstruation. There had been the possibility of infection some four years previously. There was nothing in the patient's chest or elsewhere to suggest tuberculous trouble. That the inflammatory condition must have been of a very slow and chronic character was evident from the extent to which the tube had become dilated. Two or more pints of pus were contained in the right tube. The hypertrophied condition of the bladder also points to a length of time in which there had been resistance to the outflow of urine, but the patient gave no history beyond the fact that at Christmas time she had had difficulty of micturition for a few days.

In looking up similar cases I find amongst others the following recorded:

In the *American Journal of Obstetrics* for 1900 Dr. J. Campbell reports a case in which one of the tubes contained 19 oz. of pus. The tumour attained its large proportions without causing any notable amount of pain. The origin of the condition was obscure.

My experience formerly of a pyosalpinx had been that as described by Mr. Bland-Sutton in his *Diseases of Women*, where he says:

In a fair proportion of cases of pyosalpinx the tube becomes distended, and its walls thicken in some parts and thin in others, until it assumes the shape and attains the size of a ripe banana. Exceptionally a pyosalpinx forms a swelling large enough to rise above the brim of the pelvis.

Dr. Galabin, in the *Transactions of the Obstetrical Society* for 1900, gives an account of a patient who had noticed a lump in the abdomen two and a-half years.

Menstruation had been regular and not profuse; there had at times

been considerable difficulty with micturition; she had had leucorrhoea for some time, but no history of gonorrhoea. A tumour was present, reaching a hand's breadth above the umbilicus. A thrill was felt, and a diagnosis of ovarian cyst made. At the operation both tubes were found matted together and communicating, and contained together 3 pints 4 oz. of pus.

I think the entire absence of symptoms in my case was very remarkable; for until the patient had retention of urine, one week before seeking advice, she had shown no symptoms which pointed in any way to her possessing either abdominal or pelvic tumours. The absence of all vaginal discharge and attacks of abdominal or pelvic pain seem to me to be against the probability of the pyosalpinx being gonorrhoeal in character. On the other hand, if the origin was tuberculous, so far as I can discover, she has no other focus of disease at the present time.

I should like to express my best thanks to Miss Aldrich-Blake for her kind help and assistance, both before and during the operation, and also to Mrs. Keith for giving the anaesthetic for me.

SQUAMOUS EPITHELIOMA OF THE LARYNX IN A MAN AGED 24: THYROTOMY: EXCISION OF THE LARYNX.

By G. VICTOR MILLER, M.D.,

Ophthalmic and Aural Surgeon to the North Ormesby Hospital and
North Riding Infirmary, Middlesbrough.

This patient was under my care for some time at the North Ormesby Hospital, Middlesbrough, and afterwards under the care of Mr. H. Alexis Thomson at the Edinburgh Royal Infirmary, to whom I am greatly indebted for many notes of the case.

J. W. G., aged 24, engine driver, was admitted into North Ormesby Hospital on May 29th, 1900, suffering from difficulty of breathing.

I was asked to examine him next day, and found him breathing with great difficulty; the condition had come on rapidly in the course of a few days. On examining him with the laryngoscope I recognized a large growth occupying the region of the right cord, and almost completely blocking the glottis. I advised tracheotomy, which was done the same evening, while the patient was unconscious from impeded respiration. Six days later the patient was well enough to be examined with the laryngoscope.

I now found the right arytenoid region markedly swollen and oedematous. The oedema was red and fiery looking, and not like the oedema of phthisis laryngea. A view of the interior of the larynx could not be obtained. The chest was carefully examined and found to be healthy, and there was no family history of phthisis. The onset of the trouble dated from August, 1899, when the patient began to have hoarseness without any apparent cause. There was no pain or other symptoms. The hoarseness gradually got worse, and in May, 1900, he began to have shortness of breath and difficulty of breathing in attacks for twenty minutes at a time, also some difficulty in swallowing, so that he took smaller quantities of food, and lost flesh.

A fortnight after admission I performed thyrotomy, and a large growth springing from the right cord was found filling the larynx. The growth was rough on the surface and of firm consistency. It was cleared out with Volkmann's spoon, and a large abscess in the hyoid region evacuated.

For two or three weeks after this the patient could breathe without the tracheotomy tube, which was left out at intervals. The cords could now be viewed fairly well when laryngoscopic examination was made. Portions of the growth were sent to Professor Greenfield, of Edinburgh, for examination, and he reported that it was a malignant papilloma.

Obstruction to breathing rapidly developed again after the interval named, and I advised the patient to have the whole or half of his larynx removed. To this he would not submit, so I again did thyrotomy, cleared out the growth, and cauterized the area from which it sprang. Patient was well for a short time then obstruction rapidly returned again. I advised him to go to Edinburgh and see Mr. Alexis Thomson, and he left North Ormesby Hospital on September 20th, 1900.

Under Care of Mr. Alexis Thomson.

On admission to the Edinburgh Royal Infirmary the patient appeared quite well apart from his throat. The tracheotomy tube gave him no trouble; the region of the larynx was generally full and swollen. There was an enlarged gland on the right side over the body of the hyoid. With the laryngoscope only the epiglottis could be seen, which was very greatly swollen from oedema and drawn down to right side, so obscuring the glottis. Dr. McKenzie Johnstone confirmed this. We could not be sure of epithelioma so it was decided to repeated thyrotomy.

On October 1st thyrotomy and division of the hyoid was performed. A large quantity of pus escaped from the posterior wall of the larynx; its exact source could not be seen, as the whole larynx was filled with a soft, friable growth like granulation tissue, which was not at all like usual epithelioma. The granulation tissue perforated the box of the larynx on the right side between the thyroid and cricoid. A lot of bleeding occurred as the granulation tissue was scraped away, but no blood got into the trachea, because the tube was surrounded with gauze. The wound was stuffed with worsted. The patient was none the worse. Dr. Fleming made sections of the tissue, and found it to be a very cellular squamous epithelioma. The enlarged gland was normal.

On October 4th laryngectomy was performed. A fresh opening was made in the trachea lower down. The entire larynx was removed with the muscles attached to it, with the anterior wall of the pharynx, which was also extensively diseased. The epiglottis was also removed. The trachea was sutured to the wound, and a tube passing into the gullet was secured in the wound. The wound was loosely packed with iodoform worsted, otherwise was freely open. As the tube in the gullet was causing sickness it was removed, and only inserted every four hours for feeding. The wound healed rapidly. The patient was up within a week and gained flesh rapidly. He was able to pass the tube himself. He smoked with great satisfaction.

On November 7th he began to swallow by the mouth solids and fluids, and progressed excellently. His voice was very whispery.

On December 5th the wound was almost healed. A little granulation tissue protruded between the edges of the wound. He spoke quite distinctly with whispered voice. The consonants were given very clearly. He did not put his finger over the mouth of the trachea in speaking, as it did not improve. He was only able to whistle a week ago. He did not speak well if he was nervous. He was now fat and strong, and was returning home.

On January 12th, 1901, the patient wrote to say that there was recurrence in the scar, apparently in the region of the external wound, which was rapidly growing, and that he was losing strength and flesh rapidly.

He died on June 14th, 1901. Before death he suffered a good deal from haemorrhage and foul discharge where the growth had returned in the region of the operation wound.

FOUR CASES OF MASTOID ABSCESS.

By RICHARD LAKE, F.R.C.S.ENG.,
Surgeon, Royal Ear Hospital, London.

In two of the four following cases of mastoid abscess, all of which appear to be due to an attack of influenza, there was transient middle ear suppuration, and in two there was no evidence of any previous middle-ear inflammation.

CASE I.—An actress, aged 25, sent to me in April, 1900, by Dr. Gould May, had had influenza about one month previously, with suppuration from the right ear for a few days. She also had had at that time some involvement of her chest. She now complained of a dull feeling behind the ear, together with most annoying tinnitus. On examination of the ear itself nothing abnormal was observed in the drum or meatus. Careful palpation behind the ear revealed a tender spot midway between the site of the antrum and the tip of the mastoid process. This was definitely located by firm and deep pressure. Diagnosis of suppuration of a mastoid cell in this situation was made, and the patient was anesthetized and the bone cut away from the infected area. Within a short distance of the cortex a large cell was found filled with pus. It was not found necessary to open the antrum in this case. The healing was rapid, and at the end of five weeks there was little trace of the operation.

CASE II.—A child, aged 1 year and 7 months, was brought to me in February of this year by Dr. C. L. Achard with the following history: On December 24th, 1901, the child had earache on the right side and a