colours, and was well within normal limits. Scotometric tests with Bjerrum's screen and Elliot's scotometer revealed nothing abnormal, either as regards scotomata, relative or otherwise, with white or colours, or enlargement of the blind spot.

The patient was temporarily put on mercury and large doses of potassium iodide. As a routine I would have examined the nasal sinuses on obtaining such negative results, but unfortunately I left for Europe on April 24th, 1923, and she went home and continued to take mercury and potassium iodide. On January 3rd, 1924, the Wassermann reaction was observed to be negative. On July 3rd I again had an opportunity of examining her. Vision was then: right, fingers at 2 inches; left, 6/5 partly with correction. There was definite post-papillitic atrophy of the right disc with narrowing of vessels. The left disc was oedematous and swollen to 5 D. (suggestion of papilloedema). Examination of blood, urine, nervous system, and skull by x rays gave negative results. There were no symptoms of pressure. The fields and vision of the left eye remained the same. I was unable, owing to indisposition, to undertake the exploration of the sphenoidal cells at this time. She went to her home and was not seen again till August 13th, when she was admitted to hospital. The result of ophthalmoscopic examination on this date is thus recorded: "The right disc is definitely atrophic. The arteries are quite narrow, the veins about normal; there are slight pigmentary disturbances at the disc edge; a post-papillitic atrophy. The left disc is red and slightly swollen, but much more like a neuritis than a papilloedema. There are no changes in the fundus otherwise." Perimetric and scotometric examinations gave the same results as before; the urine and blood examinations were again negative. The blood pressure was 125 mm. Hg.

On August 16th I made a full examination of the nose on both sides under local anaesthesia. The right side was normal. The sphenoidal sinus ostium when opened up disclosed a pearly-grey healthy membrane lining a small sinus. The left side of the nose appeared normal as regards frontal and ethmoidal regions, but the ostium of the sphenoidal sinus was blocked, and, on pushing the sinus probe through, pus escaped under slight pressure along the probe. The anterior wall of the sinus was partially removed, revealing a thickened and red lining. The sinus was dried out and packed with bismuth gauze and the patient sent for x-ray examination.

This method of demonstrating the relation of one sphenoidal sinus to its fellow by packing one sinus with bismuth gauze and then taking a stereoscopic x-ray photograph is useful, and aids considerably in reading the x-ray plates aright. The left sinus was much more extensive than the right, and partially enveloped it. Presumably it was of the variety to which both nerves were related, the right nerve being more vulnerable (either by virtue of a larger course in the sinus or a thinner bony canal) than the left. Such relations of the optic nerves are described and exemplified by Onodi. The patient was discharged a few days later. In November, 1924, the vision was: right, fingers at 2 metres; left, 6/6 with correction. The left field showed a slight general contraction under the same conditions as above. On ophthalmoscopic examination the left disc was almost normal in appearance. The right disc showed a post-papillitic atrophy with threadlike sheathed arteries. My note says: "The fundus immediately surrounding the disc shows a greyish granular appearance, but I would consider the disc within normal limits did I not recognize the patient."

A most interesting point in connexion with the case is the nature of the field of the left eye. Careful tests on several occasions elicited nothing. This is in contrast with many recorded cases, in which a relative central or para-central scotoma is a prominent feature. The fact that the right nerve suffered most in a left sinus affection must be comparatively uncommon. The left nerve, although affected in greater or lesser degree for over eighteen months, retained its function (although subsequent subsidence of its inflammatory condition brought as a sequel a slight cicatricial damage associated with a trivial fall in vision and a contraction of the fields). It is noteworthy that in an ordinary x-ray examination pus in the sphenoidal sinus is liable to be overlooked. Evidently, in doubtful cases of papillitis, it is very desirable to explore the sphenoidal sinuses on both sides; one must not be content with finding a normal sinus on the side of the most affected eye. This is in many cases such a simple procedure that there is no justification for omitting it.

Dr. Muthayya, medical officer in charge of the refraction department, very kindly collected and analysed the notes of this case.

USEFUL REFERENCES.

American Encyclopedia of Ophthalmology, vol. xii, p. 9588.
Onodi: *The Optic Nerve and the Accessory Sinuses of the Nose* (translation by Lückhoff).

EMBRYOMA IN THE OMENTUM CAUSING SYMPTOMS SUGGESTIVE OF URETERAL CALCULUS.

BY

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The following case is of interest, both from the point of view of pathology and of diagnosis.

A woman, aged 40, was sent to see me at the Middlesex Hospital, with a provisional diagnosis of renal calculus. Her symptoms were certainly suggestive of this condition being present. She complained of attacks of pain in the left loin coming on suddenly and radiating towards the inguinal region. She also complained of some irritability of the bladder with painful and frequent micturition, which persisted for some time after the attacks of lumbar pain. The urine contained pus, but no blood cells. The organism present was the *Bacillus coli communis*.

An x-ray examination showed the kidney region to be free from any sign of calculus, but in the pelvis was a shadow of irregular shape, about the size of a large plum-stone. Cystoscopic examination showed the bladder and the ureteral orifices to

FIG. 1.—Radiogram taken in an oblique direction with an opaque catheter in the ureter.

be normal, with the exception of some slight congestion of the bladder mucous membrane. Although the shadow in the pelvis was not in the least like that of a urinary calculus, I thought it better to make sure that it was not in the urinary tract. I therefore passed an opaque ureteral catheter, and had an x-ray photograph taken. The examination showed that the shadow of the catheter was superimposed on that in the pelvis, but another radiogram taken in an oblique direction showed that the shadow was separated by a small interval from the course of the ureter (Fig. 1). As the irregular shape of the shadow suggested that it might be caused by a calcareous deposit in an ovary, I asked Mr. Comyns Berkeley to co-operate with me in an exploratory laparotomy. Mr. Berkeley opened the abdomen, but found that both ovaries were normal; I then extracted a small, hard, irregular-shaped tumour, freely movable across the pelvis, but attached above to the lower edge of the omentum and below by a thin fold of peritoneum to the posterior wall of the bladder. The connexion with the bladder and the free mobility of this hard mass probably accounted for the patient's symptoms of pain and frequency of micturition, which were so suggestive of some disorder of the urinary tract.

On section the tumour was found to be of mixed formation, part of it being cystic and part of it hard, bony, and calcified. The cystic part contained a mass of hair and sebaceous matter. The tumour was evidently a small embryoma.

In Sir John Bland-Sutton's book *Tumours, Innocent and Malignant*, we read:

"Many cases have been reported in which cysts containing pilose skin, and occasionally teeth, have been found on the omentum and the serous covering of the intestine. In some

instances these cysts are due to the rupture of an ovarian dermoid, and some of the cells scattered about the abdominal cavity have engrafted themselves on the peritoneum, and formed independent cysts. Quite apart from cysts arising in this way, teratoid cysts do arise independently between the layers of the mesentery, the omentum, and the folds of peritoneum connected with the caecum, colon, and rectum, as well as the omentum. Most of the reported cases occurred in children and adolescents,

FIG. 2.—The teratoma cut across (two-thirds size), showing the hard part (opaque to the x rays) and the cystic part containing grease and hair.

especially females. As a rule the cyst contents are grease and hair, but some are more complex and contain bone, cartilage, muscular and nerve tissue."

"It is impossible to recognize the nature of such cysts clinically. They seem to remain latent for a variable period, and then with dramatic suddenness cause acute abdominal pain simulating peritonitis, or intestinal obstruction. Some never cause trouble and are found accidentally at a post-mortem examination."

These intra-abdominal embryomata, though quite rare, are well known. They are probably connected in some way with the development of the genital glands, and the position of this one in the immediate neighbourhood of the left ovary suggests that it was developed from a primordial cell isolated from the developing ovary.

The special interest of the present case lay in the anatomical connexions of the tumour, which produced a train of symptoms suggestive of disease of the urinary tract.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

DIAPHRAGMATIC HERNIA AFTER BULLET WOUND OF CHEST.

THE following case is interesting, not only from a pathological standpoint, but is worthy of comment as emphasizing the possibility of late sequelae in war pensioners who have received gunshot wounds of the chest.

W. J., aged 35, received a gunshot wound in the chest a fortnight before the armistice. The bullet (which was not removed) entered the back of the left side of the chest, approximately 4 in. below the inferior angle of the left scapula and $2\frac{1}{2}$ in. from the middle line.

I was called to see him on the evening of March 2nd, 1924—approximately five and a half years after he had been wounded. He had been taken ill that afternoon with retching and recurrent attacks of vomiting, associated with colicky pain all over the abdomen. The condition did not subside, but continued till the following day, when it was obvious that he was suffering from acute intestinal obstruction.

He was admitted to Ulverston Cottage Hospital, and, approximately twenty-four hours after the onset of the illness, I explored the abdomen by an incision below the umbilicus, splitting the right rectus. The caecum, distended to the calibre of an adult fist, presented itself at the wound. The distended gut was traced along the colon, as far as the region of the splenic flexure, where it appeared to vanish. The descending colon was collapsed. With the arm in the abdominal cavity up to the elbow I was able to feel an acute kink in the region of the splenic flexure. The apex of the kink appeared to be firmly adherent to the diaphragm by strong cicatricial tissue, and the bowel to be enveloped by

tissue of a similar nature. As the patient's general condition was poor (he had had two or three faecal vomits just before the operation) I closed the abdomen and performed a temporary caecostomy.

Four weeks later the abdomen was reopened by a long paramedian incision, extending from the left costal margin to below the level of the umbilicus. The small intestine was packed off, and the area of the splenic flexure investigated. I was able to view the lesion. There was a fairly large diaphragmatic hernia, the sac containing the splenic flexure and the terminal part of the transverse colon. I was able to introduce two fingers into the sac externally to the gut. It was impossible to dislodge the contents of the hernia, as the gut was firmly adherent to the sac wall by thick bands of cicatricial tissue. At the fundus of the sac the scar tissue was most pronounced, and this may have been due to an encapsulated bullet, but I could not be certain of this.

To have attempted to reduce the hernia by breaking down adhesions would almost certainly have ruptured the diaphragm, and possibly also the pleura. Accordingly ileo-sigmoidostomy was performed and the abdomen closed.

Three weeks later the caecostomy opening was closed. Some leakage occurred about the seventh day after operation and the faecal fistula recurred. It was considered advisable to give the patient a period of rest to recuperate after the three operations before attempting to reclose the opening in the gut. Accordingly he was discharged from hospital, having been fitted with a suitable controlling belt.

Three months later he was admitted to the Ministry of Pensions Hospital, Liverpool, where the fistula was successfully closed. He is now fit and well, his bowels moving regularly *per vias naturales*.

There is nothing in the man's previous history of interest other than to state that for two years prior to onset of the illness he was particularly subject to flatulence. He had never been troubled with constipation. The case, therefore, was one of acute intestinal obstruction due to an irreducible diaphragmatic hernia of traumatic origin.

I must acknowledge the services of Mr. French of Birkenhead, who performed the fourth stage of the operation, and in supplying an account of it, without which the notes of the case would have been incomplete.

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PER-URETHRAL OPERATIONS FOR PROSTATIC OBSTRUCTION.

MR. KENNETH WALKER, in his excellent article on per-urethral operations for prostatic obstruction (*BRITISH MEDICAL JOURNAL*, January 31st, p. 201), has brought into prominence work that is, I believe, carried out by only a few surgeons in this country. Perhaps the conclusions I have come to in work which has been done largely in the Surgical Unit here during the last four years may not come amiss. The method employed has been fulguration of the prostate carried out by a diathermy electrode introduced through the cysto-urethroscope.

In the malignant prostate, where so much had been hoped for, the results were poor. In the adenomatous prostate, where enlargement of the lateral lobes could be detected by rectal examination or seen through the cystoscope, any improvement was only temporary, and not greater than that which followed the introduction of a full-sized metal bougie—a method of treatment in vogue many years ago. In addition, there can be no question that in this type of case such treatment is dangerous. When, on the other hand, the middle lobe was alone involved and not much enlarged, much improvement followed fulguration; this has so far been permanent, and the residual urine has completely disappeared.

In the prostatic bar, which was secondary to atrophy of the prostate, and in the small fibrous prostate, excellent results were obtained. But in the chronic inflammatory enlargement with residual urine, which did not react to massage and dilatation, the improvement was not so immediate or so marked, though it gradually became greater.

Fulguration is not so severe an operation as prostatectomy; the mortality is much less and the convalescence much shorter. But it should not be regarded as an alternative to prostatectomy except where the middle lobe alone is enlarged. It should be carried out only in those cases where prostatectomy is unsuitable, not on account of the general condition, but owing to the state of the prostate gland itself.

Cardiff.

T. E. HAMMOND.