Museum of the Royal College of Surgeons. They were taken after death from a man 19 years of age, whose "kidney was hydronephrotic and the ureter narrowed." The calculi in this case probably amount to 40,000. None exceeds $\frac{1}{2}$ in. in diameter. In structure the concretions are crystalline at the centre and laminated towards the exterior; they are composed of nearly pure oxalate of lime.

CANCER OF GALL BLADDER DUE TO IRRITATION OF GALL STONES: CHOLECYSTECTOMY AND PARTIAL HEPATECTOMY.

By J. HUTCHINSON, JUN., F.R.C.S.,
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THE following case possesses many points of interest:

A woman, aged 66, was sent to me by Dr. Miles Milley of Hampstead with the diagnosis of gall stones. There could be no doubt she had suffered from a collection of these in the gall bladder for over two years. During this time she had repeated attacks of abdominal pain; each attack lasted upwards of twenty minutes, and was accompanied by retching and followed by sweating. A warning of each attack was given by her becoming somewhat yellow, and subsequently slight jaundice became more obvious. She was constipated, and the stools were of light colour after the attacks. She was not known to have passed any calculi, but the operation showed that these were mostly small and would readily escape notice. After each attack there was much prostration, and for a time some distension of the abdomen.

When I saw her first, in July, 1904, there was a deep-seated rounded swelling in the right hypochondrium, which moved downwards an inch on deep inspiration. The dullness over it was continuous with that of the liver. The tumour could be moved from side to side to some extent and had all the features of a distended gall bladder. Her urine was normal. In the right lung at the apex were some signs suspicious of tuberculous change. The patient was thin, and attributed her weakness and wasting to the sufferings which attended the attacks of biliary colic. I admitted her to the London Hospital and operated on July 22nd. A free vertical incision through the right rectus muscle showed a distended gall bladder overlapped by the liver edge. The latter being raised, the fundus of the gall bladder was incised, and over eighty calculi removed from its cavity. Most of these were small and faceted, but there were two or three larger ones, the largest being $\frac{3}{4}$ in. in diameter. The gall bladder was entirely cleared with the scoop and by irrigation. It was then found that the fundus was thickened and rendered hard by carcinomatous growth, with small papillary projections of the mucous membrane. Examination showed that the cancer had extended into the liver immediately above, where it formed rounded lumps, but the infiltration appeared to be limited to the immediate neighbourhood of the gall bladder. I therefore determined to excise a wedge-shaped piece of the liver with almost the whole gall bladder. When this was done considerable haemorrhage followed, but was controlled by pressure and ultimately by deep catgut sutures, bringing the sides of the extensive hepatic wound together. The neck of the gall bladder was then sewn to the peritoneum and two drainage tubes were inserted, one in the right loin and the other in the anterior wound, most of which was closed by silkworm-gut stitches.

The patient recovered from the shock of the operation fairly well, but two days later an interesting complication occurred, namely, acute dilatation of the stomach, which bulged forwards and downwards nearly to the left iliac crest. By means of washing out and the administration of strychnine this dilatation subsided, and for three weeks she went on well. The wound required daily attention. The temperature was normal during this time, but after the fourth week it was of the hectic type, without anything being found to account for it. The biliary fistula remained. She was ultimately sent to Felixstowe, where she remained some months. The hectic temperature continued, and I heard in November, 1904, that there was evidence of extensive recurrence of cancer in the liver.

At the time of operation I was in doubt whether it was worth while to attempt excision, and the sequel confirms the view that such an operation is hardly justifiable. The patient possibly lived a few months longer than she would otherwise have done, but she was an invalid the whole time, requiring the most careful nursing.

It certainly appeared that the affected area of liver was wholly excised, but naturally it is almost impossible to make sure of this. On section it was seen that the nodules shaded off into the hepatic tissue. I do not think the correct diagnosis could have been made before operation; in the more common cases of cancer around the common bile duct it is more easy to do so.

The fact that post-operative acute dilatation of the stomach was recovered from in this case is noteworthy, it being one of the gravest complications that can occur. It should also be noted that whilst the gall bladder was packed with stones and the fundus invaded with cancer, yet there was no cholecystitis, this being contrary to the accepted teaching on the subject.

That the existence of the calculi preceded for long the development of cancer there can be no doubt, and it is reasonable to suppose that their irritation led to its production. Lebert and Cornil and Ranvier, however, hold that the cancer leads to the formation of gall stones. Surely such a view cannot be correct when the fundus alone is the site of the morbid growth. Mr. Roger Williams¹ seems to admit that cancer may be caused by gall stones, though very rarely:

When gall stones and cancer of the gall bladder are concomitant I submit that all the indications point to antecedent morbid conditions of the cystic mucosa, as being the determining factor of these concretions.

What the "antecedent morbid condition" referred to is Mr. Williams does not explain. Presumably it is a form of chronic inflammation such as we see so often in the tongue as a forerunner of epithelioma. In the case just reported the mucous membrane of the gall bladder, except where it was cancerous, was to all appearance healthy, and there was no trace of cholecystitis.

I am able to adduce two other items of evidence which bear on the controversy. The first shows that cancer of the gall bladder fundus may originate independently of any calculi. A man, aged 70, died in my wards at the London Hospital as the result of severe injuries sustained by being run over. In the fundus of his gall bladder (otherwise normal and containing no calculi) was a firm nodule lying in and beneath the mucous membrane. The nodule was solitary, oval, and about one-third of an inch in diameter. For the careful microscopic report I am indebted to our pathologist, Dr. Salaman. "The small swelling consists of tubular and more or less cystic epithelial growths surrounded by strands of muscular and fibrous tissue. Some of these are purely adenomatous, and the entire growth would appear at its origin to have been an adenoma; however, changes have taken place in two directions. The subcolumnar epithelium has grown in some tubules into the lumen and converted them into solid masses of cells, whilst the fibrous external coat remains good. In others they have grown through the connective tissue and are definitely invading the stroma."

This case is of particular interest as being one of the earliest stage of cancer in this region that has been recorded.

The remaining case is one in which gall stones had given rise to typical symptoms for five years in a woman aged 42 years. It resembled so much the case first given that full details are unnecessary. I performed cholecystectomy and removed the calculi, but finding a growth in the fundus of the gall bladder, did not attempt more. She died three days after the operation, and at the *post-mortem* examination an irregular mass of cancer was found growing from the fundus into the liver. The glands in the lesser omentum were also involved: "The mucous membrane of the fundus was greatly thickened, consisting of large open alveoli lined with columnar cells, many of which are vacuolated. In the musculo-fibrous wall of the bladder are several dilated alveoli of similar nature."

It will be noted that calculi had existed in the gall bladder for several years before the growth developed. This case also confirms the grave outlook of any surgical interference in cancer of this region. The only hopeful treatment is to remove the gall stones early, before their irritation has induced cancer.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, December 31st, 1904.

TWO CASES OF SUPPURATION OF GOITRE.*

By THOMAS EVANS, M.D.,
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IN the district in which I have practised for many years simple goitre among women is not uncommon; but I had never seen a case of suppuration of goitre until 1902. However, a second case occurred in my practice within twelve months of the first. The medical brethren nearest me had not seen any such cases. The medical and surgical literature within my reach is also silent with regard to such a complaint. But in the Memoranda of the BRITISH MEDICAL JOURNAL for October 15th, 1904, p. 1005, Dr. Arthur G. Wilkins of Ashton-under-Lyne refers to a case of suppurative goitre in an old man of 74.

CASE I.

Mrs. M. T., aged 54, wife of a master mariner, childless, was in fair

* Communicated to the South Wales and Monmouthshire Branch of the British Medical Association.

health, except that she had simple goitre for many years, and had been subject to occasional attacks of catarrhal cough.

On January 5th, 1902, she had an attack of vomiting, with pains in the right back, which slowly subsided. But from January 22nd to 26th she had a series of rigors in the daytime, followed by feverishness at night. Subsequently for ten days there recurred feverishness at night, followed by remission in the morning, the temperature ranging between 99° and 102.5° , and the pulse between 60 and 68 per minute.

On the fifteenth day from the first rigors, after careful examination of the patient and consultation with my friend Dr. John Davies of Aberayron, nothing could be found to account for the pyrexia. Noon temperature 99° , pulse 56, night temperature 101° , pulse 76. Sulphate of quinine (3 gr. every four hours), and phenacetin (5 gr. at night) were administered.

On the thirtieth day, after continuance of similar symptoms, we agreed that the pyrexia was probably due to the thyroid enlargement. At noon the temperature was 100° , pulse 72, night temperature 101.5° , pulse 64. Thyroid extract was tried with phenacetin, but the same symptoms persisted till the seventy-first day, when the circumference of the neck over the thyroid swelling measured 15 in., the swelling extending vertically about 4 in., and the lower part of it on the left side becoming red and painful.

On the eighty-eighth day—that is, three months after the first rigor—the swelling on the left side had become redder and softer, but the temperature lower and the pulse slower. After consultation with Drs. Davies of Aberayron and Evans of Green Grove, the abscess was lanced and a considerable quantity of pus escaped. A large drainage tube was introduced into the wound, and it was dressed antiseptically. This operation gave considerable relief to the patient, and she improved much in appearance, but the temperature became subnormal afterwards for some days. The wound continued to discharge, and did not finally heal until three months after opening, but the affected side of the thyroid tumour disappeared entirely, and the patient recovered her usual health.

November 26th, 1904 (sixteen months after the last report). The general health of this lady has continued very satisfactory. There is no perceptible swelling on the left side of the neck, and the swelling on the right side is much diminished, being less than a hen's egg in size. The circumference of the neck over the tumour now measures only $12\frac{1}{2}$ in., being $2\frac{1}{2}$ in. less than it was a week before the abscess was opened.

CASE II.

Mr. G. J. D., aged 42, occupation schoolmaster, had an enlarged thyroid (goitre) for many years which used to swell and become irritable with colds, etc.; otherwise he had been in good health.

On July 11th, 1903, he was first attended by me, having been ailing for two or three days, suffering from feverishness, with pains in the head, erythema on the left elbow, and other symptoms, which were concluded to be owing to influenza. He was treated with aperients, salicylate of soda, and tepid sponging to allay his feverishness, and an occasional dose of phenacetin or phenazone to relieve pain. However, these symptoms continued with temporary abatement till the twelfth day of illness, when at 6 p.m. the temperature was 104° , pulse 84, and the respirations 23 per minute, and crepitation was heard on auscultating over the base of the right lung; no cough or stitch in the side. The case was also seen on this day by my friend, Dr. Evans, of Green Grove, who likewise diagnosed influenza, and recommended 5 gr. of quinine sulphate to be taken three times a day in addition to the other medicines.

On the fifteenth day, 6.30 p.m., the temperature was 104.3° , the pulse 68, and the respirations 9 to 15 per minute. No crepitation then heard over the right back. For last two days observed considerable swelling and redness of the left side of the goitre, together with tenderness on pressure. The circumference of the neck over the goitre measured 17 in.

On the eighteenth day, 5.30 p.m., temperature 100.8° , pulse 60; the swelling in the neck more tense, and extending downwards as far as the manubrium; turgid veins seen coursing across the swelling. There is distinct fluctuation to be felt in the centre of the swelling. The patient is easier, and now sleeps without phenacetin.

On the nineteenth day, after due antiseptic precautions had been taken, the abscess was freely opened, and a saucerful of pus escaped. A large drainage tube was introduced into the wound, which was afterwards dressed with carbolyzed gauze and boracic wool.

On the next day at noon the temperature was 98.2° , pulse 52 per minute. The patient felt much better, but an uncertain crepitation was again heard over the base of the right lung. There was copious purulent discharge from the abscess.

On the ninth day, subsequent to opening the abscess at 6 p.m., the temperature was 99.8° , and the pulse 68 per minute. There was still free discharge from the abscess, but it was difficult to keep the opening patent, so a plug of double cyanide gauze was substituted for a drainage tube.

In about a month after opening the abscess the patient was able to go away for change of air to the wells, etc., the sinus still discharging. The circumference of the neck over the thyroid then measured $16\frac{1}{2}$ in. Afterwards the patient returned home much improved in general health, and was able to resume his occupation in less than three months, but the sinus did not finally close until six months had elapsed. The circumference of the neck had reduced over 2 in.

November 19th, 1904. This gentleman has been in good health during the past year. The goitre on the left side has now completely disappeared, and on the right side it has much diminished, so that now he requires a collar of only $14\frac{1}{2}$ instead of $15\frac{1}{2}$, used before the illness.

It will be seen that in both these cases the persons were of middle age, and that both recovered slowly from the suppuration, followed by the disappearance of the goitre on the affected side, and diminution of it on the opposite side. The first case appeared to have been spontaneous in its origin—commencing with rigors, then running a chronic obscure course, characterized by mild evening pyrexia and morning remission, so that the cause of the symptoms could not be determined for the first month, then running on for two more months before the abscess was mature for evacuation, and taking another three months to discharge before finally closing.

The other case, which appeared to have been secondary to an attack of influenza, ran an acute course with high fever, and the abscess matured for evacuation on the nineteenth day; but the sinus did not finally close until six months afterwards.

In both these cases, the suppuration occurred on one side only, and both recovered their general health satisfactorily. It would be interesting to know what would have been the effects if the suppuration had occurred on both sides.

In the *Practitioner* for April, 1901, p. 415, Dr. Walter Edmunds says, "In the treatment of an ordinary goitre, if an operation is decided on, one lobe is generally removed. The operation is frequently followed by atrophy of the opposite lobe." But he shows that excision of the whole thyroid gland has been followed by grave symptoms like myxoedema, and even by death in one case. Mr. Bernard Pitts (in Treves's *System of Surgery*, vol. ii, p. 376) recommends in cases of solid goitre the removal or division of the isthmus only, but not to remove the whole gland.

REASONS FOR ABANDONING THE URIC ACID THEORY OF GOUT.

By CHALMERS WATSON, M.D., F.R.C.P.E.,
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IF we may judge from the discussion on the chemical pathology of gout held at the meeting of the British Medical Association in 1904, it would appear that the uric acid theory still occupies the foremost place in the mind of most investigators of this disease. Whatever place this theory occupies in the mind of those who are seeking to determine by the aid of laboratory methods the exact rôle of uric acid or its allies, it must be admitted that the theory has been abandoned by many clinicians of wide experience in the disease. Dr. Goodhart, in an address on Acidity, published in the *Lancet* in 1900, writes as follows: "For myself, I cannot but think that had it not been for our eagerness to get hold of something to 'treat,' the uric acid theory that is dominant at the present day would never have become the fetish that it has." My object in this paper is to submit facts gained from research which strongly support this teaching of clinical experience as to the minor rôle of uric acid in the production of gout.

My investigations were commenced in 1898, and with a bias strongly in favour of uric acid. As the research developed, however, the defects of this theory became more and more apparent. I am now convinced that the general adoption of the uric acid theory has been attended by two unfortunate results. In the first place, the prominence given to this theory has unduly narrowed the field of inquiry relative to the disease; and in the second place, it has obscured the significance of the facts actually observed. The grounds for these two statements will be shortly stated. These can, perhaps, best be submitted in the form of an epitome of the steps which have led me to abandon the view that uric acid is an important etiological factor in the disease. For a fuller account of the various points the reader is referred to the original papers. The investigations deal in turn with (a) chemical, (b) histological, and (c) clinical questions.

OBSERVATION I.—Uric Acid in the Blood of Birds.

The first point investigated was the presence of uric acid in the blood of birds. Sir A. B. Garrod, using older methods of investigation, failed to find uric acid in the blood of birds. Dr. Luff, in his valuable Goulstonian lectures, gives the results of his investigations on this point. He states that "after most careful examination of very large quantities of the blood of the turkey, goose, duck and fowl, I have never been able to detect any uric acid in the blood of these birds," and he interpreted this as "conclusively supporting the view that