XV. Post-mortem examination.
Liver
Spleen
Kidney, suprarenal
Heart
Bone marrow (from tibia)
Intestines

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HÆMANGIOMATOUS MYO-FIBROMATA OF THE UTERUS.

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HÆMANGIOMATA have been found rarely in the uterus. Edmund Horgan (1930) collected 20 cases of hæmangiomata of the uterus from different authors.

Virchow (1863), Oulie, Michel, Reder, Bell and Clarke (1906), Shaw (1913), and Hirschberg (1924), have each reported one case, and Kelly and Cullen (1909) have reported 5 cases of hæmangiomatous fibro-myomata.

True angiomata are rare.

Telangiectasis has only been very partial in its distribution, occurring in limited areas in myomata undergoing necrosis, hyaline degeneration or cystic change.

This condition of dilated vessels is found in tumours which have suffered from mechanical obstruction of their blood supply, such as is generally found in the lower pole of myomatous polypi and in subserous myomata with twisted pedicles. This excessive vascularity has always been associated with necrosis, red degeneration or hyaline and cystic degeneration. It has also been found in myomata, portions of which have undergone sarcomatous changes.

Bishop (1901) thinks that the development of telangiectatic or lymphangiectatic growths is difficult to understand.

Senn believes that they are tumours produced from the matrix of angioblasts and are composed of the vessels of new formations.

Kelly and Cullen (1909) think that the blood supply may be so copious in a fibroid that it becomes an angioma. This excessive vascularity is occasionally noted in the dependent portions of the submucous fibro-myoma; it may also occur when a subperitoneal pedunculated myoma becomes twisted. Angiomatous appearances may be totally independent of any interference with the blood supply.

Hirschberg (1924) found a tumour which contained clotted blood with blood sinuses lined with typical endothelial tissue.

Roger Williams (1901) thinks that in some tumours, especially of the softer variety, the blood vessels and lymphatics occasionally become largely developed, giving the tumour a cavernous aspect. Such tumours may pulsate. These tumours are apt to undergo rapid changes in size, in which muscular contractility and vascular distension are concerned.

Horgan (1930) found hæmangiomatous tissue to be within fibro-myomata which are either interstitial, submucous or subperitoneal.

Shaw (1913) reported a case in which he found an angiomatous fibro-myoma, with the uterus enlarged to the size of a turnip; sections showed the fibro-myomatous tissue to contain a large number of thin-walled blood vessels. Microscopically, they consisted of angiomatous tissue, each vessel lined with a definite layer of endothelium.

Weil found that streaks of protoplasm with nucleated projections, which become laminated in course of time, were projected from the walls of old and new capillary vessels. He found proliferations of endothelial cells which formed buds and projected into the surrounding tissues. These masses of endothelial cells became hollow and received blood from the vessels from which they sprang.

Rokitansky (1846) described the formation of blood spaces in the connective tissue which secondarily become connected with vessels.

Pathology.—The tumour is of dark red colour, and the muscle fibres may be divided into irregular small islets by the abundance of capillaries. Uterine mucosa appears smooth and glistening white. There are numerous dark blue vascular areas composed of blood vessels scattered throughout the tumour, especially in the central portion. These vascular areas present a honeycombed appearance and vary from 0.5 to 3.5 centimetres in diameter. The individual vessels are closely packed together having their walls smooth and glistening. Cystic

degenerations, of moderate degree, are also seen originating in the melting of hyaline material irregularly scattered in the tumour. These cysts contain a transparent fluid which coagulates on exposure to the air. These small cysts merge into one another having their walls smooth.

Histologically, the tumour is composed of non-striped muscular fibres arranged in bundles and cut both longitudinally and transversely. The angiomatous areas are composed entirely of arteries irregular in outline. The vessels have an endothelial lining and thick circular muscle fibres surrounding them but the greater part of the surrounding layer has undergone hyaline degeneration contrasting sharply with the neighbouring muscle fibres.

Most of the vessels are filled with blood. There are irregular areas of hyaline degeneration frequently in the vicinity of blood vessels. In the areas where softening has occurred, the tissue has undergone complete hyaline degeneration.

Case 1.—A Hindu woman, aged 40, was admitted in the Eden Hospital, on the 20th June, 1930.

The patient's family history had no bearing on the case, neither was there any history of blood or circulatory disease except an attack of epidemic dropsy in 1923 when she had swollen legs and palpitations—this condition was now cured.

Menstrual history.—Menstruation was regular, lasting for 4 or 5 days. The flow was free without any distressing symptoms. Last menstruation was about 5 days ago.

Marital history.—The patient was married when she was only 14 years of age, and had only one child, about 23 years ago. The child is living and well.

History of illness.—Two years ago the patient noticed the gradual enlargement of the lower abdomen. The patient had always been in fairly good health and could carry on the ordinary household duties. She did not complain of any blood discharge.

Physical examination.—The patient was a middle-aged woman of average size.

On palpation.—The abdomen was found occupied by an irregular bulging tumour, cystic in consistency, reaching up to the ensiform cartilage. Dullness was noticed in both the flanks due to the tumour mass. The tumour was mobile. The patient did not complain of any pain. She had no temperature.

Per vaginam.—The cervix could not be felt and was apparently high up behind the symphysis pubis. The whole of the posterior *cul-de-sac* was occupied by the bulging tumour.

Diagnosis.—Broad ligament ovarian cyst displacing the uterus upwards.

Laboratory observations.—Urine was normal; Blood—red blood cells 3,000,000 per c.mm. Hæmoglobin 60 per cent. White blood cells 10,000 per c.mm.

Operation (by Col. Green-Armytage).

The tumour was removed by subtotal hysterectomy. The tumour was intimately connected with the left broad ligament and the left ureter from which it was gently separated.

Macroscopical examination.—A huge subperitoneal fibroid of the uterus, lobulated in appearance, growing from the posterior wall of the uterus into the left broad ligament. The left tube was stretched across the tumour and the left ovary, which was cystic, was displaced. The tumour was dark brown in colour and weighed 22 lbs. 10 ozs. On section, the surfaces showed large caverns filled with blood, and these cystic blood spaces were separated by intervening white fibrous tissue. The tumour did not appear malignant.

Microscopical examination.—This showed numerous large caverns lined by a thin endothelial layer. The tumour was composed of non-striped muscular fibres. Some of the vessels were greatly dilated and they were filled with blood. The greater part in those areas of the tissue where softening had occurred had undergone hyaline degeneration.

Diagnosis.—A telangiectatic fibro-myoma with hyaline degeneration.

Case 2.—Mrs. R., aged 48, admitted on the 8th July, 1930. The patient was anæmic, her condition was low, her pulse was feeble and she was bleeding profusely at the time of admission. There was a huge submucous polypus of the size of a fœtal head hanging out of the cervix. The tumour was pulsating and was attached by a stalk to the cervix.

Laboratory observations.

Blood count—red blood cells—2,300,000 per c.mm.

White blood cells—7,000 per c.mm.

Hæmoglobin—40 per cent.

Differential count—Polymorphonuclears—70 per cent.

Lymphocytes—27 per cent.

Monocytes—nil.

Eosinophils—3 per cent.

A few normoblasts were present. There were anisocytosis and poikilocytosis.

Urine showed no abnormality.

The patient had had an attack of epidemic dropsy 2 years before the date of admission. Her marital and obstetrical history had no bearing on the case. The tumour was removed by Col. Green-Armytage by an operation through the vagina. The patient was discharged after recovery on the 15th July, 1930.

Macroscopical appearance.—A pear-shaped tumour of the size of a bullock's heart, which was soft in consistency. On section, the cut surfaces showed cystic blood spaces which were more marked in the dependent portion of the tumour at its periphery. The central portions of the tumour consisted of spongy tissue.

Microscopic appearance.—Hæmangiomatous as well as lymphangiomatous changes, which gave the tumour a cavernous aspect, had occurred. (This corresponds to tumours described by Roger Williams in which muscular contractility and vascular distention are concerned.)

Diagnosis.—Angiomatous myo-fibroma showing hæmangiomatous as well as lymphangiomatous changes.

Case 3.—The tumour was removed by subtotal hysterectomy by Col. Leicester in 1924 and sent to the department of pathology.

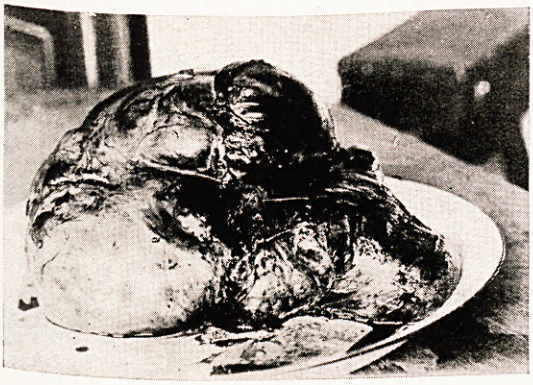

Fig. 1. Case 1.—Tumour intact; the uterus was buried in the tumour mass. The cervix is shown by a stick introduced into it. The wedge-shaped lobe of the tumour was in the pouch of Douglas.

Fig. 2. Case 1.—The cut surfaces of the tumour show large caverns filled with blood, and cystic blood spaces are separated by intervening fibrous tissue.

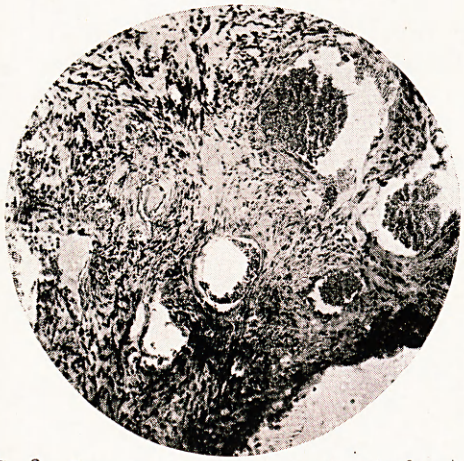

Fig. 3. Case 1.—Photomicrograph of the tumour shows large number of vessels which are filled with blood, hyaline degeneration and cystic change. (Low power.)

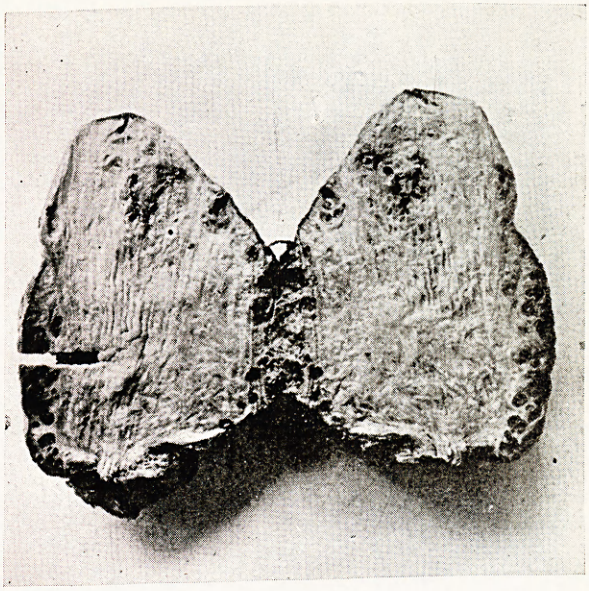

Fig. 4. Case 2.—The cut surfaces show cystic blood spaces which are particularly marked at the periphery.

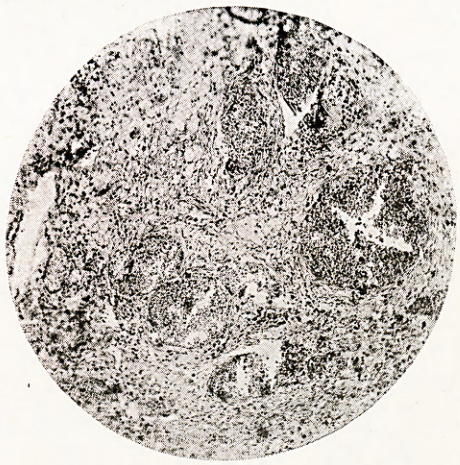

Fig. 5. Case 2.—Photomicrograph of the tumour shows hæmangiomatous as well as lymphangiomatous changes. (Low power.)

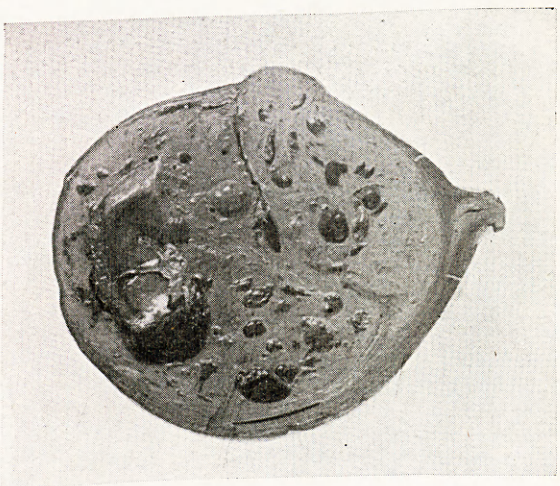

Fig. 6. Case 3.—The tumour presents a honeycombed appearance. Numerous dark blue vascular areas and masses of cystic degeneration are shown.

Fig. 7. Case 4.—A subperitoneal fibroid growing from the right cornu of the uterus by a twisted short pedicle. Cystic blood spaces are seen on the external surface of the tumour which has assumed a pitted appearance. Cut surfaces show blood sinuses.

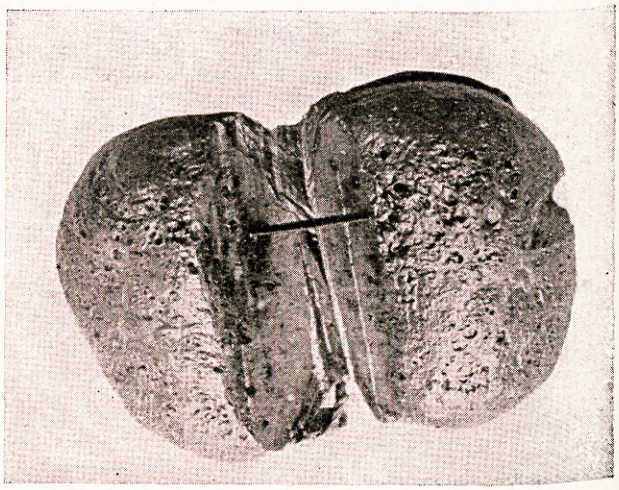

Fig. 8. Case 5.—The cut surfaces of the tumour show a mottled appearance exhibiting a large number of dark purplish compartments and small cystic spaces with gelatinous material, and white fibrous tissue is intervening between them.

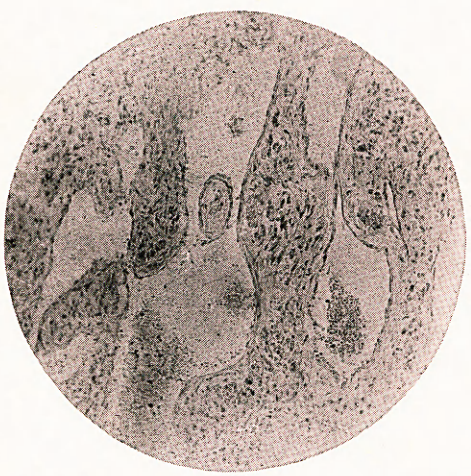

Fig. 9. Case 5.—Photomicrograph shows formations of new blood spaces in the connective tissue and small islets of soft fibrous and myomatous tissue intervening between them. (Low power.)

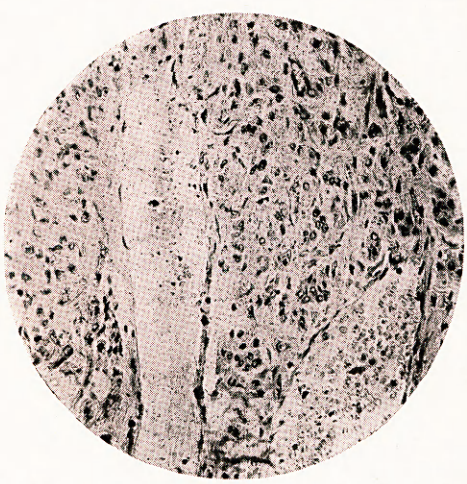

Fig. 10. Case 5.—Photomicrograph shows actual proliferation of endothelial cells which line the blood sinuses. (High power.)

Macroscopical appearance.—A tumour of the uterus, of the size of an ordinary melon, was rather cystic in consistency and appeared to be of dark red colour. On section, the tumour was found occupying the entire lumen of the uterus and also invading the uterine wall. The cut surfaces, especially in the central portions, showed numerous dark blue vascular areas composed of blood vessels from which blood escaped. These areas presented a honeycombed appearance. The individual vessels were closely packed together; vessel walls were smooth; large masses of cystic degeneration were also present. The cysts contained transparent fluid which coagulated after fixation in mounting fluid.

Microscopic appearance.—The dark blue angiomatous areas were composed of irregular vessels which had an endothelial lining and were filled with blood; muscle fibres were divided into small irregular spheres by the abundance of capillaries. Bundles of muscular fibres had undergone hyaline degeneration and cysts were formed which were irregularly scattered in the tumour in and near about the blood vessels. In the degenerated areas there was a formation of capillaries the walls of which were formed of fibrous tissue with ill-defined endothelial lining which could be seen under the oil immersion lens.

Diagnosis.—Hæmangiomatous myo-fibroma with cystic changes.

Case 4.—A Hindu woman, aged 40, was admitted in the Eden Hospital on the 14th March, 1928. She looked ill-nourished.

Menstrual history.—Menstruation began when she was 16 years of age; it was of regular occurrence and of 5 or 6 days duration. The flow was free without any cramps or backache. Last menstruation was one year ago.

Obstetrical history.—She had had six children, three of them had died. There was no abortion. Last pregnancy was 10 years ago. She gave no history of difficult labour. She complained of no cardiac or vascular disease.

History of present illness.—Patient felt a swelling in her lower abdomen for the last two years for which she sought admission in the Eden Hospital. Physical examination revealed a mobile smooth tumour, of the size of a football, below in the pelvis. There was free fluid in the abdomen.

Vaginal examination.—The uterus was found small and discrete, the right cul was slightly resistant; the left cul was clear; and the cervix was small and hard.

Diagnosis.—Fibroid of the uterus undergoing malignant changes with ascites.

Laboratory observations.

Cytodiagnosis of the ascitic fluid.—The fluid was an exudate; Rivalta's test was positive.

Leucocytes—700 per c.mm.

Erythrocytes—present in fair numbers.

Differential count.—Neutrophiles—36 per cent.

Lymphocytes—64 per cent.

A few endothelial cells also present.

Blood count.—Leucocytes—15,000 per c.mm.

Erythrocytes—2,700,000 per c.mm.

Hæmoglobin—40 per cent.

Differential count.—Neutrophiles—75 per cent.

Lymphocytes—21 per cent.

Monocytes—3 per cent.

Eosinophils—1 per cent.

A few normoblasts, anisocytosis and poikilocytosis were present.

Operation (by Col. Green-Armytage on the 19th March, 1928).

The abdomen was opened by a right paramedian incision, and several pints of grumous fluid escaped. There was a vascular pulsating tumour growing from the top of the uterus which was adherent to the coils of intestine and the greater omentum. The tumour with the uterus and its appendages was removed by subtotal hysterectomy and bilateral salpingo-oophorectomy.

Macroscopic appearance.—A subperitoneal fibroid of the size of a fœtal head growing from the posterior surface of the right cornu of the uterus by a twisted short pedicle of the thickness of an index finger.

The tumour was hard in consistency and cystic blood spaces were seen on the external surface of the tumour which assumed a pitted appearance. The site of adhesion with the intestine was marked by an aperture in the wall of a blood sinus.

On section, the cut surfaces appeared brownish-red in colour; blood simply oozed out from the blood sinuses leaving rather an irregular worm-eaten appearance. Whorls of fibrous tissue made the unquestionable macroscopic diagnosis of fibro-myoma. The capsule was thick and could be separated easily. It had neither the soft consistency nor the brain-like degenerating appearance of a malignant tumour.

Microscopic appearance.—The tumour was composed of non-striped muscular fibres and bundles of fibrous tissue cut both longitudinally and transversely. There was a large number of thin walled blood vessels, each of them lined with a definite layer of endothelium. The vessels contained red blood corpuscles. The angiomatous changes were particularly marked in the loose fibrous capsule. There were hæmorrhages within the connective tissue and the big arteries were all congested. It did not show any sign of malignancy.

The patient left the hospital on the 4th of April, 1928, and was advised to come to the hospital after a month, but she has not appeared since then.

Diagnosis.—Hæmangio-myofibroma.

The case was interesting because there was escape of blood from the wall of a cavern of the hæmangioma into the peritoneal cavity. The escape of blood resulted from a gradually increasing tension within the cavern by the twisting of the pedicle and as a result of rupture there was inflammation and the tumour was glued to the coils of intestine at this site.

Case 5.—The tumour was removed by subtotal hysterectomy and double salpingo-oophorectomy by Col. Leicester in 1923 and was sent to this department.

Macroscopic appearance.—It was a subperitoneal tumour of the size and shape of a shaddock arising from the posterior wall of the uterus. The tumour was growing on the left side and pushed the uterus to the right side. The cavity of the uterus was increased by half an inch. The endometrium of the uterus was smooth. The tube and the ovary on either side were *in situ;* the left ovary was of the size of a green almond and was found cystic in one area and the rest of the organ appeared fibrosed.

The tumour was fairly firm in consistency. The cut surfaces bulged out and showed the appearance of a beehive. They were of pink-red colour and had rather a mottled appearance exhibiting a large number of dark purplish compartments and small cystic spaces filled with gelatinous material; white fibrous trabeculæ intervened between them. The tumour exhibited this appearance throughout its entire thickness. The tumour had a thick fibrous capsule.

Microscopic examination.—This showed abundance of large cavities filled with blood. These were blood sinuses of irregular outline which had an endothelial lining. Small islets of soft fibrous tissue and transversely-cut muscle fibres intervened between them.

There were proliferations of endothelial cells and formations of new blood spaces in the connective tissue which were afterwards connected with vessels. There were also irregular areas of hyaline degeneration in the vicinity of blood vessels. This tumour represented true angiomatous changes in a myo-fibroma.

The histological appearance of this case differed from the rest in its affinity with sarcoma.

Diagnosis.—Hæmangiomatous myo-fibroma with hyaline degeneration.

Discussion.—Angiomatous changes in fibromyomata are, generally speaking, rare, but they are not infrequently encountered in the tropics particularly in Bengal where the people suffer from epidemic dropsy. Out of 6,000 specimens received by the department of pathology from the Eden Hospital during the last 10 years, 5 cases of angiomatous changes in myo-fibromata were encountered. Out of these five cases reported in this paper, only two gave a definite history of a previous attack of epidemic dropsy. It is dangerous to ascribe any reasonable connection with angiomatous changes in fibromyomata to epidemic dropsy as such cases occurred in places where people do not suffer from epidemic dropsy. The histological appearance of the angiomatous changes of the myo-fibromata is as interesting as the morbid histology of the epidemic dropsy. In a few post-mortems on epidemic dropsy, Major Shanks (1931) found a definite telangiectatic change of the blood vessels in situations where the vessels were least supported.

Von Noorden (1907) thinks that toxic substances which are retained or formed in the body may increase the attractive capacity of the blood and especially of the tissues for water. This idea has been supported by the investigations of Cohnheim and Lichtheium. They have shown that the presence of certain poisons in the blood makes the walls of the capillaries more pervious and stimulates them to active secretion.

An analogy between the angiomatous condition of epidemic dropsy in tissue which suffers from œdema and apparently starves from want of proper nutrition and blood supply, to this nævoid change of the fibro-myomata where the tissue suffers from malnutrition from mechanical obstruction seems obvious. It is curious that angiomatous changes should appear in such conditions.

None of the cases with the history of epidemic dropsy showed angiomatous changes in any other part of the body.

Summary.

1. Hysterectomy was performed for angiomatous changes in fibro-myomata and all the cases reported in this paper recovered uneventfully.

2. All the cases of this paper were of middle age.

3. Angiomatous changes were found in tumours which suffered from mechanical obstruction of their blood supply, in myomatous polypi particularly in the lower poles (Case 2), and in subserous fibro-myoma with twisted pedicle (Case 4), and as a result suffered from hyaline or cystic degeneration—particularly manifested in Cases 1 and 4. A true angiomatous change was found in Case 5.

4. Angiomatous fibro-myomata may simulate the characters of a malignant tumour in the peritoneal cavity (Case 4).

My thanks are due to Col. J. C. H. Leicester, M.D., F.R.C.P., F.R.C.S., I.M.S. (retired), and to Lieut.-Col. V. B. Green-Armytage, M.D., F.R.C.P., I.M.S., Professors of Obstetrics and Gynæcology and Surgeons of the Eden Hospital, for permission to work on their cases and also to Major G. Shanks, M.D., I.M.S. (retired), and to Dr. T. Sur, M.D., Professors of Pathology, Medical College, Calcutta, for giving me every facility in the work.

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ORIENTAL SORE.*

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ORIENTAL sore is a disease which is sufficiently prevalent in the Punjab to attract considerable attention, and it is one of those minor ailments which worry very much the minds of the persons suffering from them. In the course of this paper, I have attempted to place before you the results of some methods employed by me in the treatment of the disease.

The disease may be defined as a specific ulcerative condition of the skin caused by a special protozoal organism.

In India the disease is known by various names, such as Frontier sore, Lahore sore, Delhi boil, local sore, etc. However, all such names are misleading, for the disease is not confined to any particular locality in India, nor for that matter to India alone, nor again to oriental countries only. It is best to call it cutaneous leishmaniasis, because of its causation, and because of the cutaneous nature of the lesion.

Its distribution is very wide. It is endemic in many tropical and subtropical regions—it is also found in temperate zones. It occurs to a great extent among the peoples of India, Arabia, Iraq, Persia, Syria, Asia Minor, Turkey, Greece, and Egypt. Cases have also been reported from Italy.

It is more common in large towns than in the country side; and in countries where it is endemic its distribution is not general, but is confined to certain districts only.

It is most prevalent at the end of the summer and at the beginning of the cold weather.

Ætiology.†—The causal organism is a protozoal parasite, *Leishmania tropica.* Recent work suggests that the infection is probably carried from man to man by the agency of the sand-flies, *Phlebotomus papatassii* and *Phlebotomus sergenti.*

The avoidance of the bites of these sand-flies is the only prophylactic measure that can be advocated.

Signs and symptoms.—Incubation period is uncertain; it may be as short as 10–14 days, or it may be as long as six months or even more.

The sore may appear on any part of the body, but the usual sites are the exposed parts.

It attacks people of any race, sex, and age, who expose themselves to infection. Occupation and social position do not seem materially to influence susceptibility.

There may be a single sore on the body, or multiple sores may appear from auto-inoculation as a result of scratching. Usually there are two or three on the same patient; occasionally, there are many more. Torres (in 1920) in South America recorded a case in which he observed as many as 248 distinct sores on the body of a single individual.

In Iraq, where it is mostly known as Baghdad boil, some of the lesions are very extensive. Some of those seen by me among the inhabitants there, while I was in that country, were so big that they looked like new growths.

As a rule, the patient does not complain of any constitutional symptoms when infected with the disease in the natural manner.

It has already been noted that Wenyon and others, in the course of experimental work upon themselves, suffered from fever, etc., in association with the sore produced on them from infection produced artificially. This question of constitutional symptoms in the disease, therefore, needs further careful study. In any case, it is known that constitutional symptoms in the form of fever, etc., do occur in patients suffering from multiple sores.

The local manifestation of the disease is very variable indeed. It may show itself as anything from a mere superficial erosion to big diffuse indurated masses, looking like warty outgrowths or granulomata.

The disease commences as a small red papule, shotty to feel, its surface being covered with a reddish brown scale. The appearance suggests very much a mosquito bite mark, but it is less irritating than the latter, and causes little discomfort locally.

*Read at the fortnightly meeting of the British Medical Association, Punjab Branch, on 17th December, 1930.

† It has been necessary, in the interests of economy in space, to exclude some of the writer's notes on ætiology and prophylaxis.