BILHARZIASIS OF THE PREGNANT UTERUS

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SCHISTOSOMIASIS (bilharziasis) is a parasitic infestation which may affect a host of body organs but whose brunt usually falls on the urinary or the intestinal tracts. Even in localities where the disease is endemic such as Egypt, South and East Africa, South America and Japan, involvement of the female genital organs is comparatively rare. Few papers dealing with gynaecological bilharziasis have appeared in the literature, and in some of them the effect of the disease on the female reproductive function was briefly discussed. Charlewood, Shippel and Renton (1949) described a case of post-partum uterine fibrosis in a woman who suffered from vesical bilharziasis and thought that the fibrosis of the uterus might have been of bilharzial origin but they could find no bilharzia ova in the uterus or in any other part of the genital tract. Narabayashi (1914) reported a unique case in which the worm of *Schistosoma japonicum* passed through the placenta and infested the foetus. Bilharzial infestation of the pregnant uterus, however, has never before been demonstrated.

We have lately been removing small pieces of tissue from the cervix and the upper and lower segments of the pregnant uterus in order to investigate the arrangement of the muscle and connective tissue fibres. In two of the cases studied bilharzia ova were accidentally encountered in the wall of the pregnant uterus.

CASE REPORTS

Case 1

Patient R.A.H. (Hosp. No. M 12624/57), aged 20 years, was admitted on 21st June, 1957, with the diagnosis of inevitable miscarriage. She had been married for 2 years and had had 1 full-term normal delivery. She had started to menstruate at the age of 12; her periods had always been regular and normal in amount and duration but accompanied with dull, aching, suprapubic pain. She had suffered from haematuria and other bladder symptoms at the early age of 7, had been found to have urinary bilharziasis and given a course of tartar emetic injections following which all her urinary complaints were permanently relieved. On admission she was 24-weeks pregnant and complained of moderate vaginal bleeding, of hypogastric and low back pains and of watery vaginal discharge. On examination her pulse was 88, temperature 37·6, blood pressure 120/80 and her urine was albumin and sugar free. Examination of the heart, chest and abdomen revealed normal findings. On vaginal examination the cervix was found 2-fingers dilated, the membranes ruptured and a leg was protruding through the external os. A quinine-pituitrin course was soon followed by the expulsion of a small macerated foetus. Since the placenta was retained and bleeding continued it was decided to evacuate the uterus under general anaesthesia. After evacuation two small pieces of tissue were removed, one from the region of the external and one from the region of the internal cervical os. This is at present routinely done after evacuation as a part of a detailed investigation of the normal structure of the pregnant uterus. In this case the microscopical examination of the tissue removed from the region of the external os revealed the presence of massive bilharzial infestation (Figs. 1 and 2).

Histological Report. The specimen is partly covered by stratified squamous epithelium and partly by high columnar epithelium with racemose glands. Directly underneath the epithelium, especially the stratified, there is a large number of bilharzia ova (about 50 in one section). They are arranged mostly in big groups, some are scattered and few are embedded deeply in the substance of the cervix.

There is oedema and congestion of the stroma, an appearance consistent with the histological picture of pregnancy. Van Gieson stain shows that the bulk of the cervical tissue is fibrous, the muscle tissue being very scanty. The ova are mostly degenerate and calcified, denoting old infection. There is cellular reaction mostly fibroblastic in relation to the ova; this reaction is minimal where the ova are condensed in masses. There is also superficial ulceration of the epithelium in relation to some ova which may thus easily pass to the outside with the discharge. There is mild superficial chronic septic infection with some polymorphs and many plasma cells. Eosinophils are very scarce.

Following this unexpected finding further investigations were carried out. Meticulous examination of the urine and stools failed to disclose the presence of bilharzia ova. Cystoscopy revealed the presence of "very mild chronic cystitis with no typical bilharzial lesions in the left part of the posterior superior bladder wall and in the bladder base". Intravenous pyelography and kidney function tests revealed normal findings.

Case 2

Patient R.A.M. (Hosp. No. M 14100/57), aged 25 years, was admitted on 11th July, 1957, early in the first stage of labour. She had been married for 7 years and had 2 living children both delivered by lower segment Caesarean section for general pelvic contraction. The last section had been performed two and half years previously. She had had one abortion of 3 months shortly after marriage. She had started to menstruate at the age of 13 years and her periods had always been regular but she used to have menorrhagia and congestive dysmennorrhoea. She had suffered from haematuria and dysuria at the age of 9 years, was found to have vesical bilharziasis and was treated by tartar emetic injections which completely cured her urinary symptoms. Her present pregnancy was uneventful.

On examination she was found to have a normal full-term pregnancy, the presentation was cephalic, the position was left occipito-anterior and the head was high above the brim. Uterine contractions had started a few hours before admission. Her pulse was 110, temperature 37° C. and blood pressure 110/70. The foetal heart sounds were of normal rate and rhythm. The urine was sugar and albumin free. On vaginal examination the cervix was 2-fingers dilated and the membranes were intact. There was evidence of pelvic contraction at all pelvic straits. The Müller-Kerr manœuvre revealed the presence of second degree cephalopelvic disproportion.

A lower segment Caesarean section was performed by the first author and a male living child weighing 3·2 Kg. was delivered. Sterilization was performed at the patient's own request. The incision in the lower segment was made longitudinally in the middle line extending upwards for 1 cm. above the junction of the lower and upper segments and downwards for 1 cm. below the junction of the lower segment and the cervix. A slice of the uterine wall was removed along the whole length of the incision and was as usual sent for histological examination. This showed that the lower uterine segment was heavily infested with bilharzia ova (Figs. 3 and 4). When the histological report was received the placenta was not available for examination. The foetus, however, was healthy and showed no evidence of bilharziasis or other disease.

Histological Report. The lower uterine segment contains several (10 in one section) bilharzia ova. Five of them are very superficial, being covered only by the epithelium. They are calcified and appear dark blue in haematoxylin and eosin sections. The rest are embedded in the submucous layer (Fig. 3), are mostly degenerate and some are calcified. No cellular reaction is present in relation to the ova. There is septic infection and oedema of the mucosa and muscle tissue. There is also decidual reaction in the superficial layers of the mucosal lining of the lower uterine segment (Fig. 4).

In spite of careful examination no bilharzia ova could be detected in the patient's urine or stools. The patient refused cystoscopy saying that she had no urinary symptoms whatever. Intravenous pyelography and kidney function tests showed normal findings.

Comment

Bilharziasis of the corpus uteri is an exceedingly rare condition. Te Groen (1939) found in his vast material only 2 cases of bilharzial endometritis. Mahfouz (1949) described one case in which bilharzia ova were detected in the substance of a uterine fibromyoma. Charlewood *et al.* (1949), in their study of gynaecological schistosomiasis in South Africa, which covered the period from 1911 to 1948, mentioned that bilharzia ova were found in the body of the uterus in only 4 cases. In one of them the ova were found in small nodular structures on the surface of the uterus. In the 3 other cases they were found in the endometrium which in one case was metropathic, in another it had undergone metaplasia to a squamous type and in the

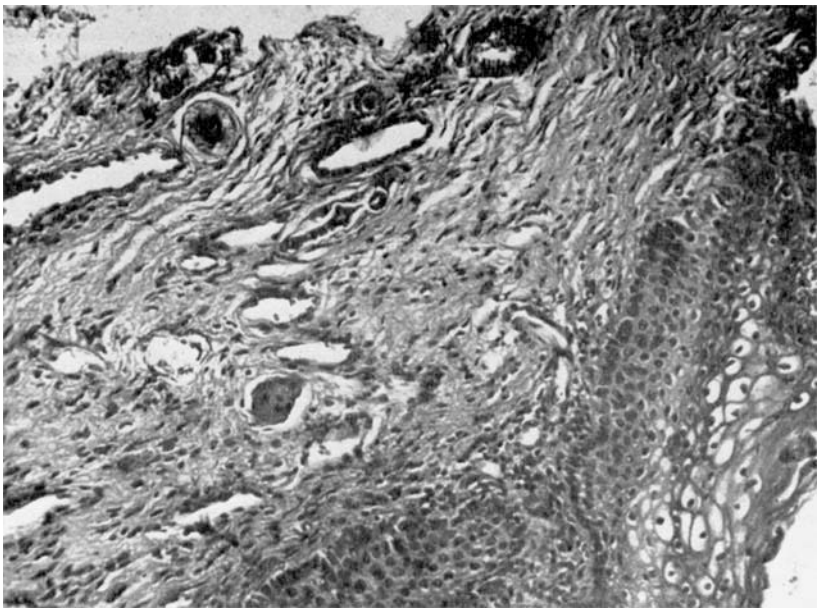

FIG. 1

Note the 3 degenerate bilharzia ova in the subepithelial connective tissue of the portio vaginalis of the cervix.

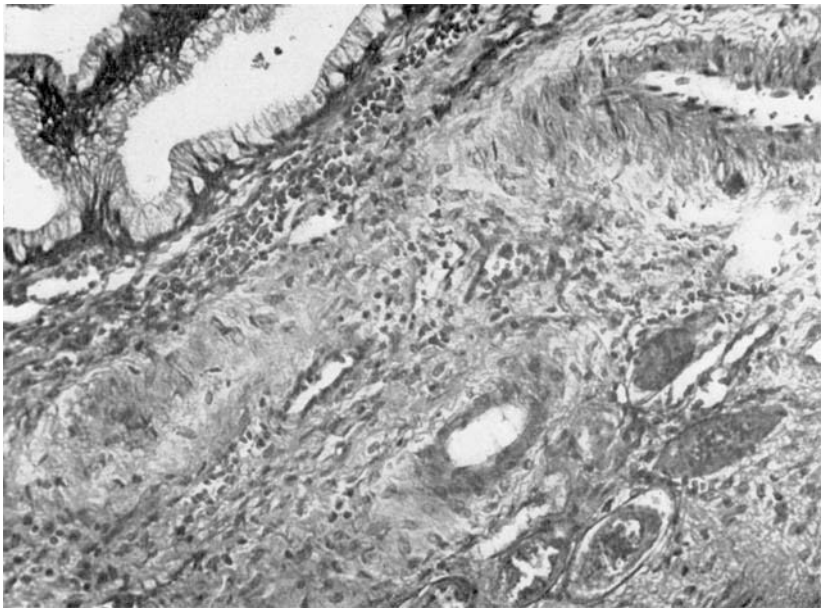

FIG. 2

Note the 5 bilharzia ova longitudinally cut and arranged in a line. One of them shows a terminal spine denoting haematobium infection.

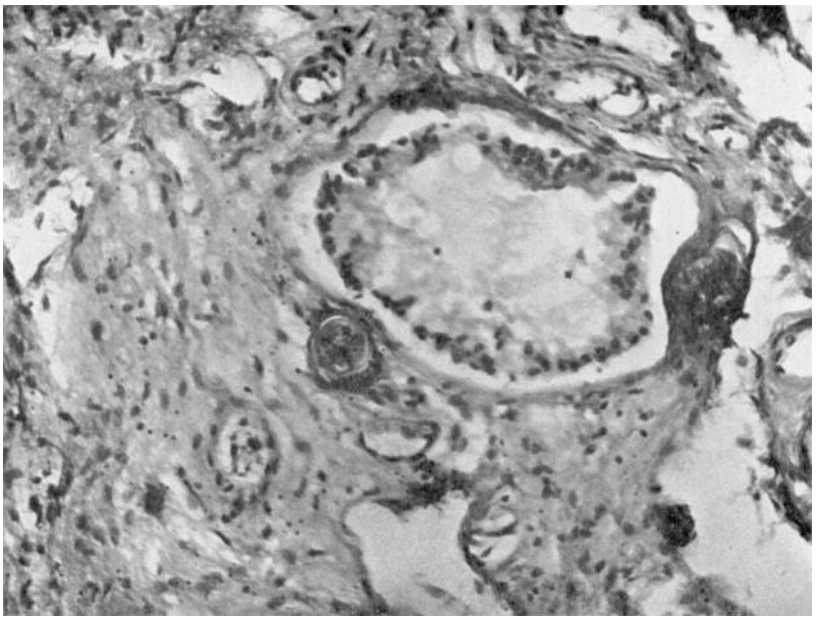

FIG. 3

Section in the lower uterine segment showing 2 bilharzia ova in the wall of a gland and apparent oedema in the connective tissue stroma.

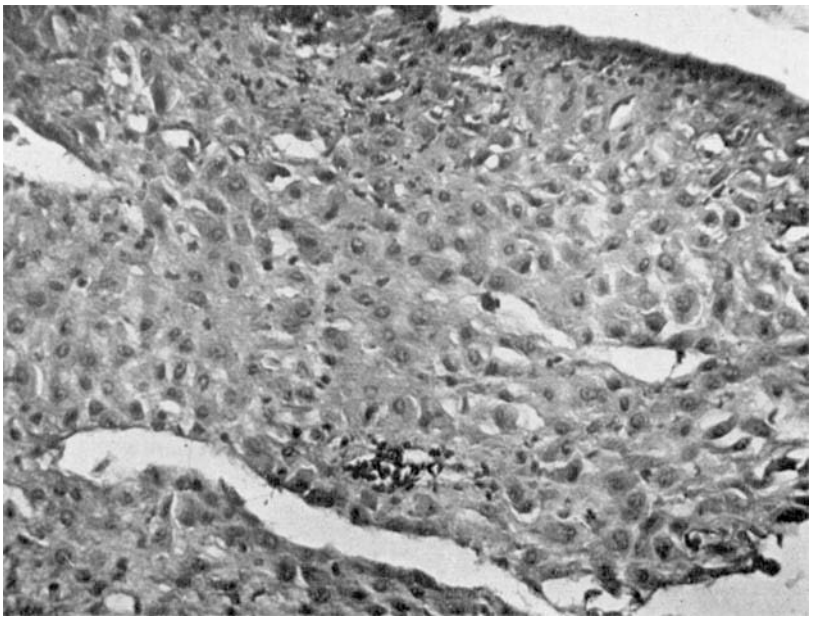

FIG. 4

Note the superficial decidual reaction in the mucosa of the lower uterine segment.

third a squamous cell carcinoma of the uterus had developed. Magdi and Hefnawi (1951) found among 17,344 gynaecological patients in Egypt only one case of bilharziasis of the endometrium in spite of the large number of curettages performed. They stated their belief that "it is inconceivable that the parasite which instinctively seeks an excretory organ of suitable nature to lay its eggs for propagation of the species should seek the uterus which being a thick-walled muscular organ is entirely unsuited for the purpose". Madden (1922) stated that he had never seen involvement of the uterine mucous membrane in bilharzial patients.

Bilharziasis of the cervix is less uncommon. Charlewood *et al.* (1949) described 16 cases while Magdi and Hefnawi (1951) encountered 18. The recent employment of routine colposcopy in our clinic has led to the discovery of a number of cases which were undetectable by inspection and palpation (Youssef, 1957). Sterility is often present in bilharzial patients (Girges, 1934; Charlewood *et al.*, 1949), especially in cases of cervical bilharziasis where the diseased cervix seems to present a barrier to successful insemination.

Because of the rarity of uterine bilharziasis and the prevalence of sterility in bilharzial patients it is not difficult to understand why bilharziasis of the pregnant uterus has not heretofore been reported. On the other hand it is surprising that in a comparatively small series of pregnant uteri subjected to biopsy bilharzia ova could be demonstrated in 2 cases. This could be a matter of mere coincidence but it must lead to the suspicion that the previous failure to detect bilharziasis of the pregnant uterus in infested localities might have been due to the fact that in practice the indications for microscopic examination of the pregnant uterus are indeed very few.

An interesting feature of our two cases is the finding that the urinary bilharziasis which had been present in both disappeared completely following previous tartar emetic treatment while the bilharzial lesions in the uterus remained. The reason for this may be that ova when embedded in the thick muscular wall of the uterus are not so accessible to the action of the drug. A further point of interest in the first case is the fact that she presented herself with inevitable miscarriage of a dead foetus. It is widely believed that bilharzial patients in general are more liable to miscarriage, premature labour and intra-uterine foetal death, this being due to systemic intoxication, anaemia or kidney failure rather than to any local effect on the genital tract (Girges, 1934; Charlewood *et al.*, 1949). In our case none of these factors was present and since the foetus and placenta could not be examined it is not possible to tell whether the foetal death and miscarriage were in any way related to the bilharzial condition.

Summary

Two cases of bilharziasis of the pregnant uterus, the first to be reported in the world literature, are described in detail. The causes of the extreme rarity of this pathological entity are discussed.

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