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Clinical Records

Aural Schistosomiasis mansoni

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Schistosoma mansoni is common in Nigeria as well as in other countries of West Africa (Edington, 1979). The eggs are laid in the small venules of the submucosal layer of the intestinal wall and pass out usually in the faeces but some may enter the blood stream to be found in any organ of the body (Edington *et al.*, 1975). However, a careful search of the available literature failed to reveal any report of schistosomiasis in the ear and hence it was decided to publish this rare case.

Case report

A 7-year-old-boy, complained of mucopurulent, intermittent, non-foetid, non-blood stained discharge from his right ear for the last two years, and a gradually increasing swelling in his right postaural region for the previous month. Its onset was insidious, painless and without any febrile episode. He also complained of moderate hearing loss in his right ear but no tinnitus or vertigo. The patient had not taken any antibiotics during the last month. There was no loss of weight or appetite.

A native doctor had incised the postaural swelling in its lower part ten days before. This incisional wound had not healed, resulting in a sinus formation discharging pus.

The patient was an active, healthy looking, normally built and nourished child. There was an almost spherical swelling, 3 cm. in diameter, over his right mastoid area with a sinus in its lower part (Fig. 1). The skin overlying the swelling was stretched but normal in texture, its temperature was not raised and it was not adherent to the underlying swelling. The swelling itself was cystic, non-tender and adherent to the underlying bone while the sinus contained muco-purulent discharge. The right external auditory meatus contained muco-purulent discharge which was sterile on culture and the posterior bony meatal wall was bulging forward to occlude any view of the tympanic membrane. The left ear was normal and facial nerve was intact on both sides. There was no lymphadenopathy, the chest was normal and neither liver nor spleen were palpable. Audiometry revealed a moderate conductive hearing impairment in the right side, average loss being 55 dB. in speech frequencies. X-ray of the mastoids revealed a sharply defined destruction of the right mastoid bone (Fig. 2). His blood leucocyte count was normal and there was no eosinophilia.

Under general anaesthesia, via a right postaural incision 20 ml. of pus was evacuated; pus was found to be sterile on culture. The underlying mastoid cortex was eroded behind the suprameatal triangle and the mastoid air cells as well as the bony meatal wall were found to be destroyed. The antrum and middle ear were full of pale granulation tissue which was removed together with the necrosed malleus and incus. The

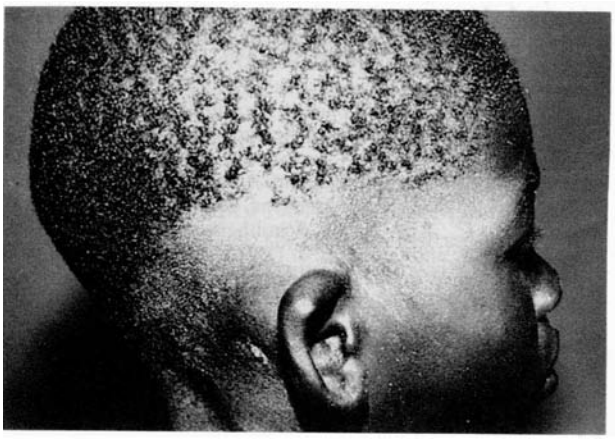


Fig. 1

Lateral profile of the patient showing post-aural swelling on the right mastoid area with a sinus in its lower part.

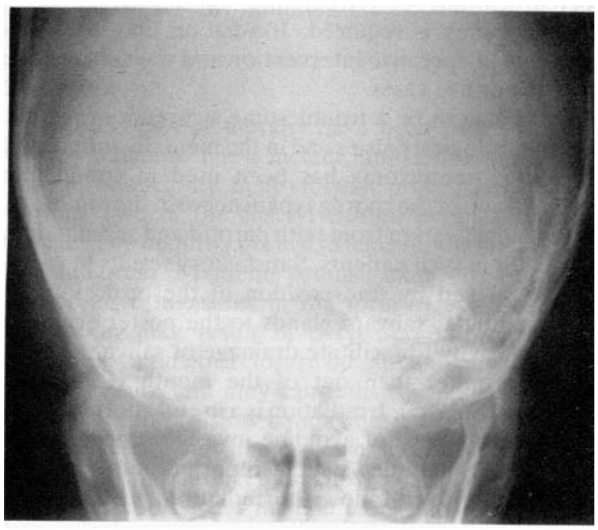


Fig. 2

Skull X-ray—Towne's view showing destruction of the mastoid air cells on the right side.

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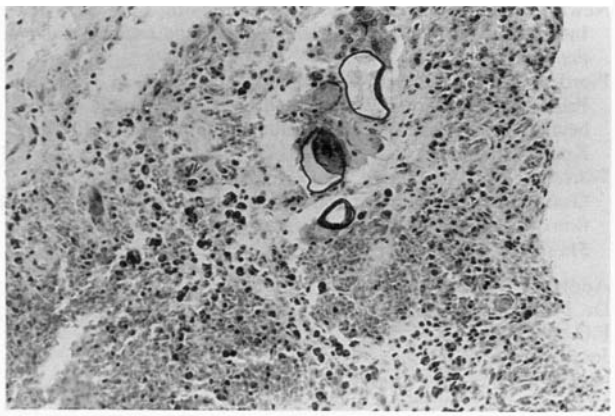


FIG. 3a

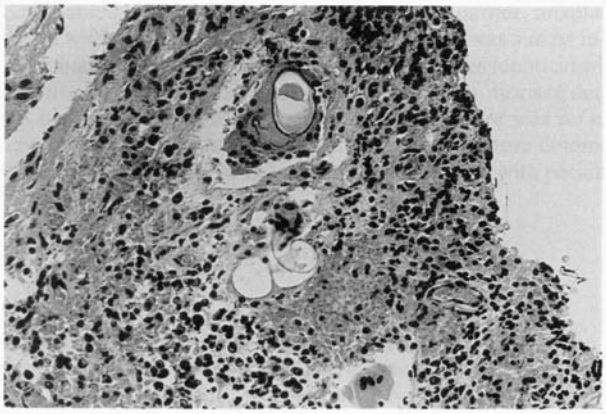


FIG. 3b

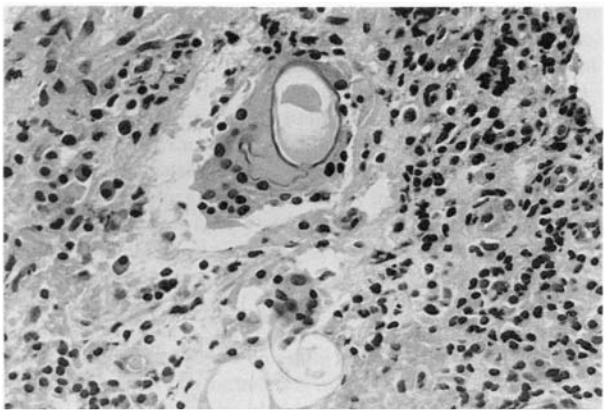


FIG 3c

FIG. 3a, b, c

Histopathology of the removed material from the right ear revealed chronic inflammatory tissue surrounding Schistosoma mansoni egg shells.
3a stained with Ziehl-Neelsen ×400.
3b stained with Haematoxylin and eosin ×400.
3c stained with Haematoxylin and eosin ×650.

dura and sigmoid sinus were exposed and found to be healthy. The tympanic membrane showed a subtotal perforation of the pars tensa. No cholesteatoma matrix was seen in the antrum or middle ear. A meatotomy was performed and the postaural incision closed in two layers. The post-operative period was uneventful.

Histopathological examination of the material removed revealed chronic inflammatory granulation tissue surrounding numerous Schistosoma mansoni egg shells (Figs 3a, b, c). Re-interrogation of the patient revealed that the patient was in the habit of bathing in a pond near his house but he never had any dermatitis, urticarial rash, haematuria, epileptic fits or attacks of dysentery, epigastric pain and fever. His stool examination revealed mild Schistosoma mansoni infection but the urine examination was negative. He was given tablet niridazole by mouth, 25 mg./kg. body weight per day, for seven days along with boro-spirit ear drops in his right ear. After one month, his stool examination, repeated at weekly intervals for three weeks, failed to reveal any S. mansoni eggs. His ear has been dry for the last two years and the post-operative mastoid cavity has healed without any granulation tissue. He has been advised to undergo tympanoplasty in his right ear.

Discussion

No definite pre-operative diagnosis could be made in this case. Intermittent, mucopurulent, non-foul smelling, non-blood stained ear discharge indicated benign chronic suppurative otitis media. A cystic postaural swelling with bulging posterior bony meatal wall and destruction of the mastoid cortex on X-ray indicated a dangerous type of otitis media but the absence of pain and fever did not favour a diagnosis of acute mastoiditis. The patient had not taken any antibiotics which might have masked these symptoms. Eosinophilic granuloma was considered but the radiological appearance was not characteristic. A sterile aural discharge and painless postaural swelling could have occurred in tuberculous otitis media but absence of pulmonary tuberculosis and sensorineural hearing impairment ruled out this diagnosis. Histopathological diagnosis of schistosomiasis came as a surprise.

Schistosoma mansoni infections are sometimes asymptomatic (Plorde, 1980) and the same was observed in this patient as well. There was no history of characteristic high spiking fever, chills, cough, urticaria, abdominal pain or diarrhoea. There was no lymphadenopathy, tender enlarged liver or fine scattered rales in the lungs.

The eggs of this blood fluke are known to become deposited at ectopic sites such as the pulmonary arterioles and vertebral venous plexus (Faust, 1948), upper female genital tract (Arean, 1956), brain and spinal cord (Chang *et al.*, 1957) and eyes (Newton *et al.*, 1968). Beaver *et al.* (1984) had reported that the eggs may escape into the tissues of the pancreas, kidneys, adrenals and myocardium. They can also produce fissure-in-ano and fistula into ischio-rectal fossa, perineum or buttocks. The eggs may not produce any histopathological change in these tissues (Edington *et al.*, 1975) or may result in granuloma formation consisting mainly of lymphocytes, macrophages and eosinophils (Moore *et al.*, 1977). The latter response is possibly an immunological reaction of the delayed hypersensitivity type (Warren *et al.*, 1967). The presence of these eggs in the middle ear and mastoid produced chronic suppurative otitis media with a post-aural abscess in this patient.

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References

Arean, V. M. (1956) Manson's schistosomiasis of the female genital tract. *American Journal of Obstetrics and Gynecology,* **72:** 1038–1053.

Beaver, P. C., Jung, R. C. and Cupp, E. W. (1984) *Clinical Parasitology,* 9th ed., Lea and Febiger; Philadelphia. pp. 415–448.

Chang, Y. C., Chu, C. C. and Fan, W. K. (1957) Cerebral

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schistosomiasis—an observation of forty five cases. *Chinese Medical Journal,* **75:** 892–907.

Edington, G. M. (1979) A review of the pathology of manson's schistosomiasis with a note on its occurrence in Nigeria. *Nigerian Journal of Medical Sciences,* **1:** 3–13.

Edington, G. M., Nwabuebo, I. and Jnaid, T. A. (1975) The pathology of schistosomiasis in Ibadan, Nigeria with special reference to the appendix, brain, pancreas and genital organs. *Transactions of Royal Society of Tropical Medicine and Hygiene,* **69:** 153.

Faust, E, C. (1948) An enquiry into ectopic lesions in schistosomiasis. *American Journal of Tropical Medicine,* **28:** 175–179.

Moore, D. L., Grove, D. L. and Warren, K. S. (1977) The Schistosoma mansoni egg granuloma: Quantitation of cell populations. *Journal of Pathology,* **121:** 41–50.

Newton, J. C., Kanchanaranya, C. and Previte, L. R. Jr. (1968) Intraocular Schistosoma mansoni. *American Journal of Ophthalmology,* **65:** 774–778.

Plorde, J. J. (1980) Schistosomiasis, Chap. 211. In Harrison's Principles of Internal Medicine, 9th ed. Edited by K. J. Isselbecher, R. D. Adams, E. Braun-wald. McGraw-Hill Koga Kusha Ltd. New York. p. 907–911.

Warren, K. S., Domingo, E. O. and Cowan, R. B. T. (1967) Granuloma formation around schistosome eggs as a manifestation of delayed hypersensitivity. *American Journal of Pathology,* **51:** p. 735.

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