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Case Report

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Mud Hydrocele in A Calcified Sac

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Summary
It is not uncommon to find hydrocele during routine physical examination in patients coming from an area endemic for filariasis. Often the size of the hydrocele and the associated physical discomfort are the reasons the patient seek surgical intervention. Though expected to be a routine surgery, at times there are unexpected findings on surgical exploration. We present one such case where the wall of the hydrocele was calcified, instead of clear straw-coloured fluid there was mud like material and the testis was small sized and atrophic. The management of this case is described along with a review of literature to deal with such unexpected findings during hydrocele surgery.

Background
Hydrocele is collection of fluid between the parietal and visceral layer of tunica vaginalis. Though it can have varied aetiology, it is often filarial in origin when patients present from an area endemic for it. Physical examination with fluctuation and trans illumination are the characteristic clinical findings. This is on account of the presence of yellowish straw-coloured fluid. Long standing hydrocele can at times complicate this evaluation as the wall may be calcified and the fluid is thick and not pale yellow. Presence of these not so common findings should not be a cause of alarm on the operating table. These cases can and should be managed in the standard way which is excision of the sac. Eversion of sac is not recommended for hydroceles of filarial origin.

Case presentation
A 45-year-old male presented with right loin pain. Since last 20 years he was resident of an area endemic [1] for filariasis . Clinical examination showed marked enlargement of scrotum. The left side scrotal swelling was 15 x 7 cm while the right-side scrotal swelling was 7 x 5 cm. It was firm in consistency and fluctuation could be appreciated on both sides. Trans illumination was not appreciated. It was possible to reach above the swelling. There was no cough impulse. The penis was partly buried because of bilateral hydrocele. A clinical diagnosis of Bilateral Hydrocele was made. As the primary complaint was of loin pain he was evaluated for the same and found to have a renal calculus. A plain X ray KUB and a Non-Contrast CT of the abdomen and pelvis also included the scrotum, and the findings are as shown in figure No. 1 & 2. He underwent percutaneous nephrolithotomy (PCNL) for the calculus and presented later for surgical management of hydrocele as he was bothered by its size.

Investigations
Baseline biochemical investigations were within normal limits. X ray pelvis with scrotum showed soft tissue shadows of both hydroceles. The hydrocele on left side showed patchy calcification peripherally (Figure 1).

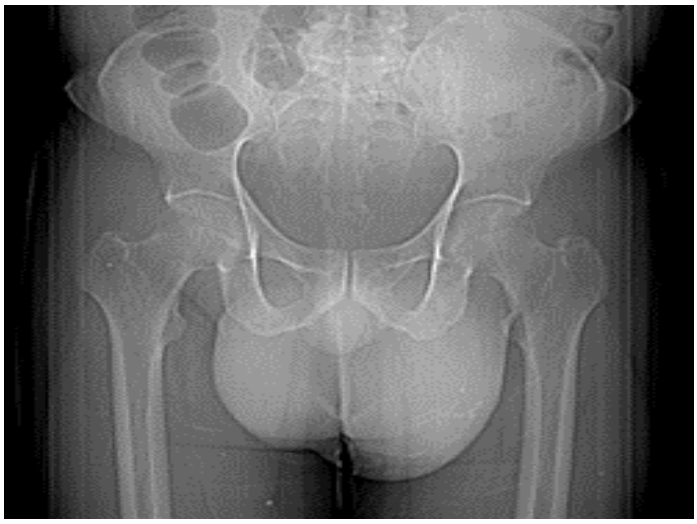

Figure 1: X ray pelvis showing calcification in left scrotum.

Non-contrast CT scan of both the scrotum was included with the abdomen CT done for kidney stones. The CT showed right hydrocele sac of 4.3x4.3x8 cm. The left hydrocele sac was 6.35x6.1x11 cm. The left hydrocele showed calcification

in the sac wall. Left testis was smaller in size. It was compressed because of the hydrocele sac. The fluid in both the hydrocele sac was of 20-30 Hounsfield unit density (Figure 2).

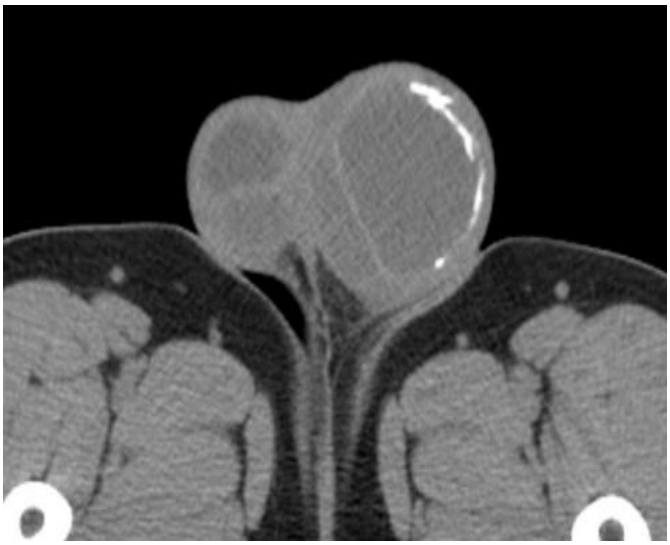

Figure 2: Non-contrast CT showing peripheral calcification in the hydrocele sac.

Treatment

The surgery was undertaken in regional anaesthesia. The approach was para-raphian. The Left side was operated first and on opening the sac thick mud like material was seen (Figure 3).

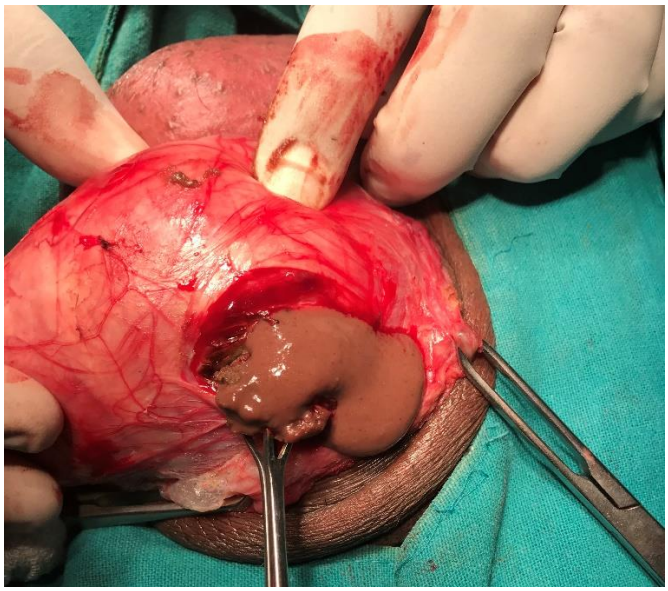

Figure 3: Left hydrocele sac containing dirty mud like material.

It was not foul smelling. There were soft putty like deposits in the sac which had be sucked out. The left testis could not be appreciated well during this dissection (Figure 4).

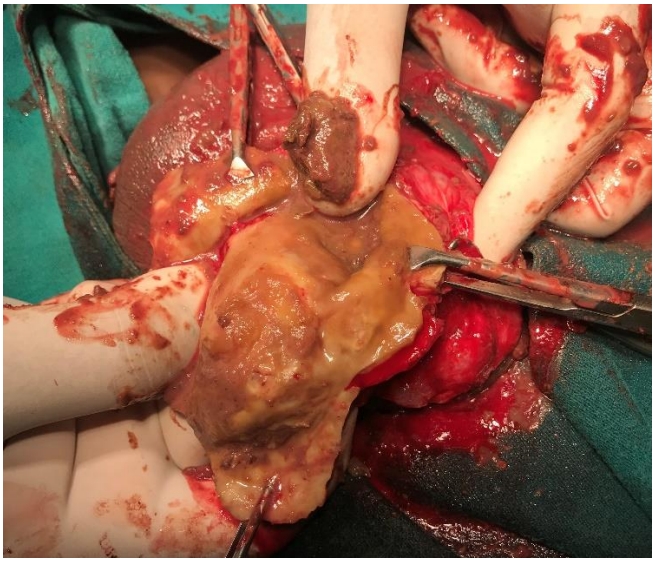

Figure 4: Left hydrocele sac [opened up] showing lumps of putty like mud, the outline of left testis not made out clearly.

Due to this unusual finding we aspirated the right side and found similar material (Figure 5).

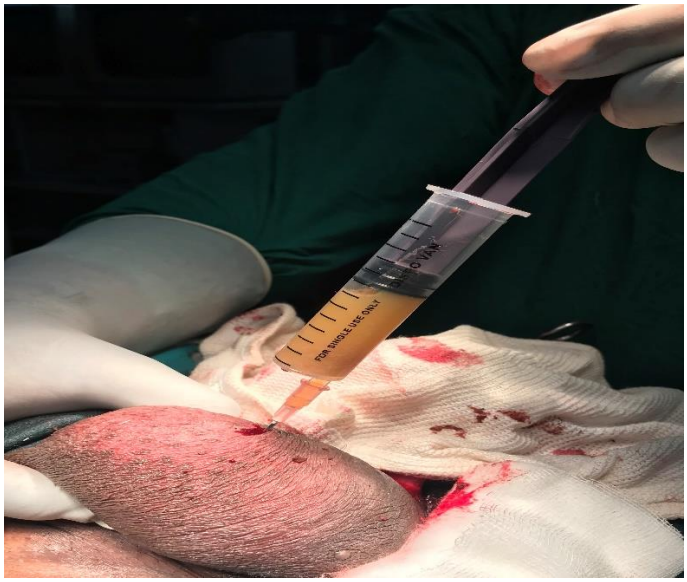

Figure 5: Right hydrocele sac being aspirated, mud like material.

The right side was also explored, and all the material sucked out. The right testis appeared normal. (Figure 6) After due deliberation, in view of this unusual finding, left orchidectomy along with complete removal of sac was done. While on the right-side excision of the sac was done. Left side specimen was sent for histopathology.

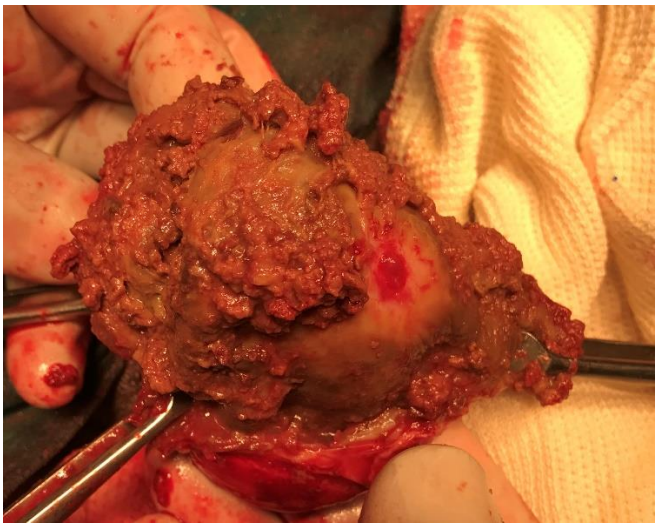

Figure 6: Right hydrocele sac opened up, lumps of mud. Sac is thick. Right testis is normal.

Outcome and follow-up

Post-operative recovery was uneventful. The histopathological evaluation showed**:** Left sided specimen measured 13x6 cm on gross pathological examination. The left testis measured 3.5 cm in length. It was trapped in the sac. The histology from the sac wall showed fibro-collagenous tissues. There were foci of lymphocytic cell infiltration, increased vascularity, areas of calcification and necrosis. Eosinophils were seen sparsely. Microfilaria were not seen. Testis did not show any significant pathology except for foci of lymphocytic cell infiltration. Two years later after the operation he is doing well. There is no recurrence of hydrocele on right side.

Discussion

Hydrocele is not an uncommon finding amongst male patients coming from areas endemic for filariasis. Very often it is the discomfort due to its size that is the reason for seeking medical attention. Thus, commonly these patients have hydroceles for more than a decade before surgical intervention is sought. Calcification of the hydrocele sac is a rare complication. Chronic infection is proposed to be cause of calcification of hydrocele sac. Calcification is rare in idiopathic hydroceles. Few cases of chronic hydrocele with calcification have been reported. Kickham [2] is credited with the first report of calcified hydrocele. The hydrocele sac in his patient contained 15 cc of milky white fluid. Goel [3] et al reported a case of egg shell calcification in the hydrocele of an 80 year man. But the surgical details of this patient are not reported. Barolia [4] et al reported a similar case. The hydrocele sac in this patient was yellowish, containing cholesterol crystals and lymphocytes. Kokotas [5] at al reported a case of chronic hydrocele with calcification of the sac. The sac in his case contained considerable amount of yellow fluid. Goel[6] et al in another publication report egg shell calcification of the hydrocele. The operative details are not reported in this case. Although calcification is known in chronic haematocele, we did not consider this case to be haematocele, because of the absence of history of trauma. Hydrocele fluid is usually straw coloured [7]. Mud in hydrocele is rarely observed. Dilli [8] et al reported a case of chronic hydrocele with egg shell calcification. Their patient was not from endemic area. Hydrocele sac was thick. It contained inspissated creamy material. In this case chronic inflammatory process with some element of bleeding due to unrecognized trauma could be the reason for the thick mud like material seen. Mud is sometimes seen hydrocele sacs in high endemic regions of India. Usually, the sac wall is thin and calcifications are rare. The histopathology in the specimens of these sac showed eosinophilic preponderance (Dr Sanjay Purohit personal communication).

As per WHO updates, there are around 25 million men worldwide estimated to be suffering from filarial hydroceles [9]. Lymphatic filariasis is endemic in India. Forty percent of the global burden of the disease is contributed by India[10]. Demonstration of microfilaria is said to be the definitive evidence of filariasis. But these are usually seen in earlier part of the disease process. By the time patients present with hydrocele, they are amicrofilariaemic [11][12]. In endemic areas detection of filarial antibodies is of limited value and all hydroceles are considered filarial unless proved otherwise[11]. Surgery is the only treatment for hydrocele. Medical treatment has no effect on the size of hydrocele [13]. Eversion of the sac is not a preferred surgery for filarial hydrocele as the eversion surgery leaves a significant bulk of hydrocele surgery thereby giving poor aesthetic results. Moreover, the tunic in filarial hydrocele is abnormal and diseased. It is better to remove it [13]. Excision of the hydrocele sac is the preferred surgery for filarial hydroceles. Complete excision should be aimed at. [7]. Recurrence rates for eversion of sac are 7% and for excision 3-5%[14]. In our patient we removed the left side sac completely along with the testis as the testis was compressed, atrophic and we could not make out testis separate from the sac. However, on histopathology the testis was unremarkable except that it was compressed in the sac. This makes us think whether testis should be preserved in such cases despite being atrophic. With the paucity of literature in this area this would be a contentious decision.

Learning points/take home messages.

- Filariasis is the most common cause of hydrocele in endemic areas. Calcification in hydrocele sac is rare.
- Chronic infection in hydrocele sac may form mud like material. It should not be a cause of alarm to the operating surgeon. The hydrocele in such cases should be operated with accepted guidelines i.e., excision of the sac. Eversion of hydrocele sac is not indicated in filarial hydroceles.
- Whether orchidectomy should be done if there is associated atrophic testis is debatable. In view of the Normal histopathology in our case we feel that it should not be done
- Biochemical evaluation of this fluid may give more insights into the aetiology of this finding.

Patient consent

Patient's consent for publication is obtained

Contributor ship statement:

Dr. Prashant Motiram Mulawkar: Conception and design, drafting the article, Final approval of the version published, Agreement to be accountable for the article and to ensure that all questions regarding the accuracy or integrity of the article are investigated and resolved.

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