

CASE REPORT

An atypical case of meconium periorchitis as paratesticular mass in a neonate

Harnam Singh Rekhi¹, Sushil Kumar Mittal¹, Srinath Reddy Mannem¹, Sahil Arora¹, Kaushal Seth¹, Sathya Pakkiri¹, Ravitej Singh¹, Saryu Gupta² & Manoj Mathur²

¹General Surgery Department, Government Medical College and Rajindra Hospital, Patiala, Punjab, India

²Radiodiagnosis, Government Medical College and Rajindra Hospital, Patiala, Punjab, India

Correspondence

Srinath Reddy Mannem, Room No. 124,
PG-Doctors Hostel, Rajindra Hospital, Patiala,
Punjab 147001, India. Tel: 9779450767;
E-mail: srinathreddy123@gmail.com

Funding Information

No sources of funding were declared for this study.

Received: 1 April 2016; Accepted: 28 May 2016

Clinical Case Reports 2016; 4(9): 866–869

doi: 10.1002/ccr3.619

Key Clinical Message

A 20-day-old boy was presented with left scrotal swelling, clinically diagnosed as hydrocele. Ultrasonographic findings suggested hydrocele with paratesticular mass. Intraoperatively we found paratesticular mass, separate from left testis. Specimen revealed fibroconnective tissue with mucoid degeneration and focal areas of calcification suggesting meconium periorchitis. It is important to consider meconium periorchitis as one of the etiologies, thereby avoiding unnecessary orchidectomies.

Keywords

Hydrocele, meconium periorchitis, orchidectomy, paratesticular mass, scrotal mass.

Introduction

Meconium periorchitis (MPO) is an infrequent lesion that typically occurs in the first months of life [1]. Intrauterine bowel perforation can be caused by thickened meconium associated with cystic fibrosis, bowel atresia, volvulus, or vascular compromise causing leakage of meconium into the peritoneal cavity. Some bowel perforations heal without obvious sequelae and the baby appears well at birth. Meconium reaching the scrotum through a patent processus vaginalis results in a scrotal mass [2]. The typical presentation is a soft hydrocele at birth which becomes harder in weeks as the meconium calcifies. Both the masses and the calcifications have the tendency to resolve spontaneously without compromising the testicle. It mimics a scrotal mass, and without the knowledge of this rare disease, it may lead to unnecessary orchidectomy [3]. Radiological evaluation with ultrasonic features and plain abdominal film may provide findings enough to suspect MPO. A normal testicle with this tumor-like lesion can differentiate it from scrotal tumors [4]. We present a case of MPO and aim to emphasize unexpected MPO as a possible diagnostic pitfall in a newborn with a scrotal mass, and recognition of this benign entity could prevent unnecessary orchidectomy.

Case Report

We present a 20-day-old healthy term boy who was delivered normally after an uneventful pregnancy. His parents noticed swelling of the left scrotum and brought to the surgery outdoor department of Government Medical College, Patiala. The baby appeared well and was feeding fine; local examination was done. A painless left scrotal enlargement was noted. On palpation, the left scrotum had variable consistency from soft to firm. Transillumination test showed translucence in few areas suggesting hydrocele and firm consistency areas with opacity suggesting a scrotal mass. The scrotal mass was hard, localized, not clearly separable from the testis on examination, and not tender to touch (Fig. 1). The patient had normally descended testes and did not have any difficulty in the neonatal nursery, such as delayed passage of meconium or signs of bowel obstruction. There were no signs of tenderness or erythema (Fig. 1).

Clinical laboratory studies, including urea and serum electrolytes, liver function tests, C-reactive protein and serum alpha-fetoprotein, were within normal limits.

An ultrasound of bilateral scrotum (Fig. 2A and B) during his admission demonstrated that the right testis



Figure 1. showing enlarged left scrotum.

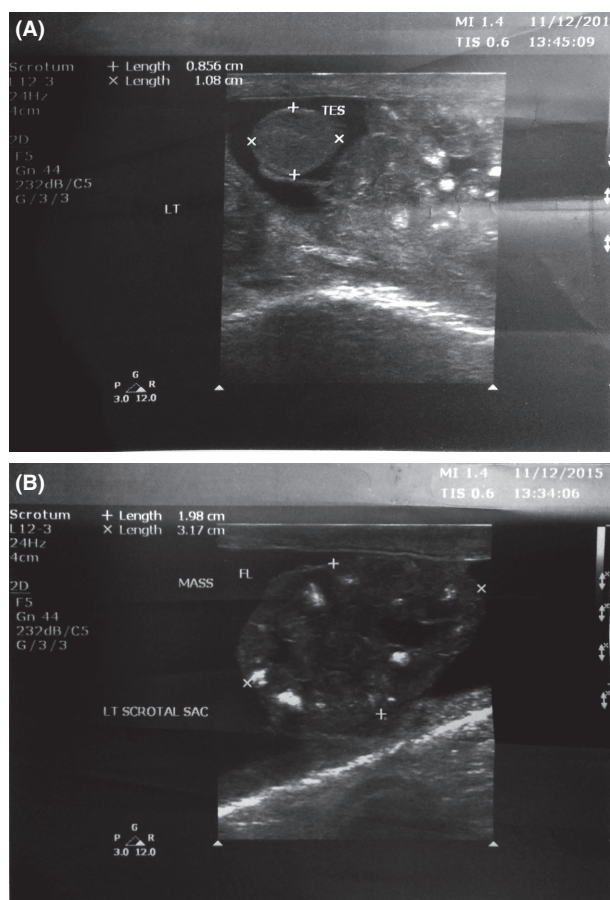


Figure 2. (A) Left testis with paratesticular mass. (B) Left paratesticular mass.

was normal in size, shape, and echo pattern with small hydrocele. Within the left scrotum there was a para/extratesticular mass of approximately $3.26 \text{ cm} \times 2.13 \text{ cm} \times 2.38 \text{ cm}$ dimension within the left tunica vaginalis cavity, distinctly separated from the ipsilateral testis and surrounded by the large left-side hydrocele. The left side of testis was normal in size and shape, but with altered echo pattern. This mass has multiple echogenic foci, some of them showing calcifications within it. MRI was done for academic purposes which also corroborates with these findings (Fig. 2A and B).

Ultrasound of the abdomen and X-ray of the abdomen (Fig. 3) and chest were normal. Patient was anemic at the time of admission for which packed red blood cells of 80 mL was transfused and later he was put on hematinics to achieve adequate hemoglobin levels required for surgery.

He underwent scrotal exploration by scrotal approach. Intraoperatively we found a circumscribed, firm paratesticular mass greenish in color, which was adherent to the tunica vaginalis (Fig. 4), separate from the left testis (Fig. 5). The dissection was accomplished, the postoperative course was uneventful, and the boy was discharged the next day.

Gross pathologic appearance confirmed multiple greenish soft tissue pieces measuring $3 \text{ cm} \times 2.5 \text{ cm} \times 1 \text{ cm}$ in aggregate (Fig. 6).

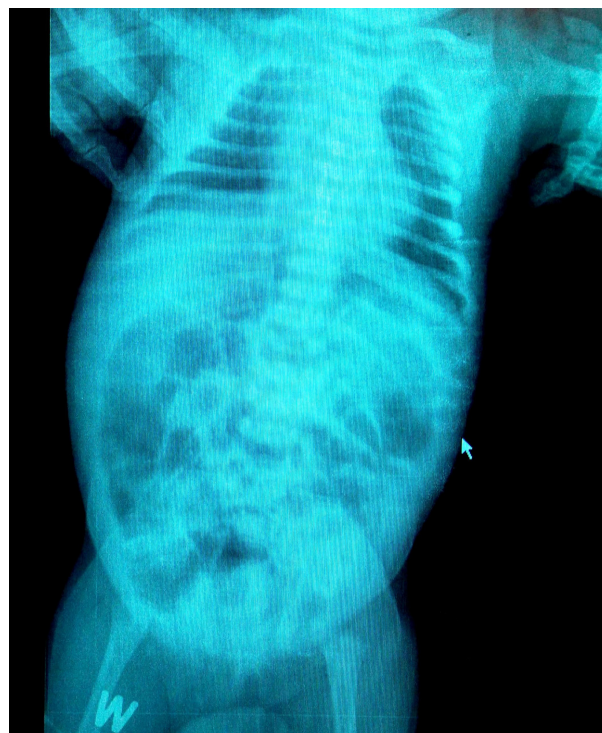


Figure 3. Abdominal X-ray.



Figure 4. Greenish paratesticular mass.



Figure 5. Normal left testis.

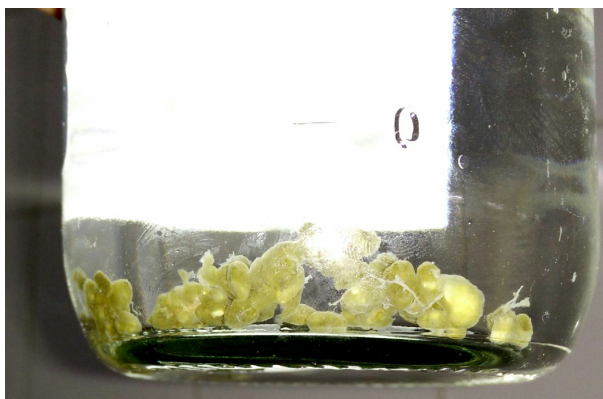


Figure 6. Specimen in bottle.

Microscopical section shows fibroconnective tissue showing abundant mucoid degeneration with focal areas of calcification. Features are consistent with MPO.

Discussion

MPO is a rare condition in infant boys who have had healed meconium peritonitis. The patient's age at the time of diagnosis of the associated mass varies, patients typically in the first months of life, but MPO has been reported in children up to 5 years old [2]. Meconium is the greenish, viscous intestinal content of the distal small bowel present after the fourth month of fetal life. It contains swallowed amniotic fluid, bile salts, bile pigments, cholesterol, mucin, pancreatic enzymes, intestinal enzymes, squamous cells, lanugo hair, and other cellular debris [5]. Meconium peritonitis occurs when a bowel wall rupture during late fetal life or early postnatal life allows meconium to enter the peritoneal cavity. This may be associated with volvulus, bowel atresia, or mesenteric vascular insufficiency. If the ruptured bowel wall heals, there may be no evidence of the cause or the site of perforation. This is called meconium peritonitis [6]. Passage of the meconium through the patent processus vaginalis may result in MPO and the mass-like lesion arises because of an inflammatory reaction from meconium within the scrotal sac. The patent processus vaginalis is an evagination of the peritoneum from the ventral abdominal wall into the inguinal canal formed as the testis descends into the scrotum in the seventh month of gestation. The consistency and appearance of meconium in the scrotum evolve over time. The soft extratesticular mass at birth eventually hardens and becomes partially calcified [7]. Suspicion of neoplasia, although very uncommon in this period of life, may be caused by a scrotal mass or sonographically detectable calcifications [8].

We present a case of MPO in which the 20 days old infant is clinically well, aside from the scrotal mass which is initially thought to be not only a hydrocele but also a hard mass, raising the suspicion of a neoplastic process of testicular or paratesticular tissue. Calcification at birth suggests that the perforation occurred earlier in gestation. Meconium in the peritoneal cavity initiates sterile, chemical foreign body peritonitis and causes foreign body giant cell reaction, chronic inflammation, and finally scarring [5]. Peritoneal calcifications follow, and these classified masses in the scrotum can slowly resorb and do not require excision [9].

Ultrasonography represents the favored imaging technique due to its ability to differentiate between the extra- and intratesticular masses. As most extratesticular lesions are benign, whereas most intratesticular lesions are malignant, it is importance to perform a preoperative ultrasonographic examination. On the other hand, abdominal radiographs may help to detect calcifications, which is absent in 10% of the cases [9]. It has been reported that 13% of cases had other congenital anomalies, including

scrotoschisis, hypospadias, omphalocele, and esophageal atresia. Cystic fibrosis, causing a thickened meconium and in utero bowel perforation, has been associated with MPO in 9% of cases, compared to 25% of neonates with meconium peritonitis [10, 11]. Prenatal detection of MPO has been reported in several cases. The differential includes an inguinoscrotal hernia, a testicular torsion, an organizing hematoma, and a tumor [12]. Several scrotal masses, clinically present with calcifications, include mature teratomas, gonadoblastomas, calcifying clear cell Sertoli tumors, testicular microlithiasis, testicular torsion followed by hemorrhagic infarction, and metastatic neuroblastomas. These various clinical presentations cause huge confusion with a scrotal tumor and can result in unnecessary orchidectomy. In case of MPO, surgical exploration is indicated to confirm the diagnosis when abdominal calcifications are not present; a scrotal tumor is suspected when there is progressive enlargement of the testis [1, 13]. Most cases of MPO have been confirmed surgically, but in a case with typical sonographic findings, that is, with scrotal and abdominal calcification, surgery might be avoided [12] and kept under observation. In our case, the abdominal ultrasonography did not show abdominal calcification and therefore scrotal exploration was performed. Despite the benign nature of MPO, past studies indicated that unnecessary orchidectomies were performed in 18% of the cases [9]. The diagnosis of MPO should be considered as one of the etiologies of congenital scrotal masses in infants and young children and this may obviate unnecessary orchidectomy. Atypical cases do occur, in which surgical exploration and histological confirmation are still warranted [14].

Role of Ultrasound

Sonographic findings of meconium peritonitis may help clarify the diagnosis. However, a triad of sonographic findings has previously been described in patients with meconium peritonitis, which included scrotal masses with calcifications, hydroceles, and absence of blood flow to the peritesticular mass on Doppler studies [10]. Our case did demonstrate blood flow to the peritesticular mass, which shows that it may not always be possible to manage these patients conservatively as histological confirmation is needed in such cases. However, we have to acknowledge that ultrasound is an operator-dependent procedure and variations do exist.

Conclusion

When a paratesticular mass with calcifications and hydrocele is present it is important to consider MPO as one of the etiologies of congenital scrotal mass in infants and

young children, thereby avoiding unnecessary orchidectomies.

Conflict of Interest

None declared.

References

1. Algaba, F., G. Mikuz, L. Boccon-Gibod, I. Trias, Y. Arce, R. Montironi, et al. 2007. Pseudoneoplastic lesions of the testis and paratesticular structures. *Virchows Arch.* 451:987–997.
2. Kalra, P., and J. Radhakrishnan. 2006. Meconium periorchitis. *Urology* 68:202.
3. Brown-Harrison, M. C., M. Harrison, B. S. Reid, P. C. Cartwright. 2000. Meconium periorchitis – a cause of scrotal mass in the newborn. *Clin. Pediatr.* 39:179–182.
4. Williams, H. J., L. J. Abernethy, P. D. Losby, et al. 2004. Meconium periorchitis a rare cause of a paratesticular mass. *Pediatr. Radiol.* 34:421–423.
5. Gilbert-Barnes, E., and S. Gilbert-Barnes. 2007. Male reproductive system. Pp. 1414–26 in E. Gilbert Barnes, ed. *Potter's pathology of the fetus, infant and child*. 2nd ed. Mosby-Elsevier, Philadelphia.
6. Sung, T., W. F. J. Riedlinger, D. A. Diamond, et al. 2006. Solid extratesticular masses in children: radiographic and pathologic correlation. *AJR Am. J. Roentgenol.* 186:483–490.
7. Herman, T. E., and M. J. Siegel. 2004. Meconium periorchitis. *J. Perinatol.* 24:53–55.
8. Bach, A. M., L. E. Hann, O. Hadar, W. Shi, H. H. Yoo, C. S. Giess, et al. 2001. Testicular microlithiasis: what is its association with testicular cancer? *Radiology* 220:70–75.
9. Dehner, L. P., D. Scott, and J. T. Stocker. 1986. Meconium periorchitis: a clinicopathologic study of four cases with a review of the literature. *Hum. Pathol.* 17:807–812.
10. Careskey, J. M., J. L. Grosfeld, T. R. Weber, et al. 1982. Giant cystic meconium peritonitis (GCMP): improved management based on clinical and laboratory observations. *J. Pediatr. Surg.* 17:482–489.
11. Casaccia, G., A. Trucchi, A. Nahom, et al. 2003. The impact of cystic fibrosis on neonatal intestinal obstruction: the need for prenatal/neonatal screening. *Pediatr. Surg. Int.* 19:75–78.
12. Wax, J. R., M. G. Pinette, A. Cartin, and J. Blackstone. 2007. Prenatal sonographic diagnosis of meconium periorchitis. *J. Ultrasound Med.* 26:415–417.
13. Patton, W. L., A. M. Lutz, J. K. Willmann, P. Callen, A. J. Barkovich, and C. A. Gooding. 1998. Systemic spread of meconium peritonitis. *Pediatr. Radiol.* 28:714–716.
14. Alanbuki, A. H., A. Bandi, and N. Blackford. 2013. Meconium periorchitis: a case report and literature review. *Can. Urol. Assoc. J.* 7:E495–E498.