Case Report

Coexistence of Gastroschisis, Scrotoschisis and Transverse Testicular Ectopia: A Case Report

Abubakar Yahaya[1], Tunde Talib Sholadoye[1], L.J.C Anyanwu[2], Adesoji O Ademuyiwa[3], Aminu Umar[4]

[1]Department of Surgery, Ahmadu Bello University Teaching Hospital, Zaria, Nigeria, [2]Department of Surgery, Aminu Kano Teaching Hospital, Kano, Nigeria

3Departmet of Surgery, Lagos University Teaching Hospital, Lagos, Nigeria, [4]Department of Surgery, Abubakar Tafawa Balewa Teaching Hospital, Bauchi, Nigeria

Abstract

Extrusion of the testis through the scrotal wall is called scrotoschisis. Coexistence of scrotoschisis and transverse testicular ectopia is extremely rare. When the above anomalies are associated with gastroschisis, the condition becomes life threatening. This is a report of a neonate presenting with gastroschisis, scrotoschisis and transverse testicular ectopia. The child was in obvious respiratory distress with central cyanosis and fever. The baby was immediately commenced on oxygen, dextrose containing intravenous fluid and other resuscitative measures. There was a defect located on the anteromedial aspect of the right hemi-scrotum, well circumscribed and oval in shape, measuring about 2 cm x 3 cm in diameter. Both testes extruded through the defect. The bowels were cleaned with warm normal saline and an improvised silo was applied. Due to the unstable condition of the child, the testes with their spermatic cords were also cleaned and covered with saline soaked gauze. The plan was to perform a bilateral orchidopexy when the baby was stable. The baby's condition remained unstable and he died on the second day of admission. A better outcome would have been achieved if the patient had presented earlier to our facility.

Keywords: Gastroschisis, Scrotoschisis, Transverse Testicular Ectopia, Silo, Orchidopexy.

Introduction

Gastroschisis is defined as a congenital malformation characterized by visceral herniation through an abdominal wall defect usually to the right side of an intact umbilical cord and not covered by a membrane.[1] Just like gastroschisis, a similar entity known as scrotoschisis may be seen in the scrotum. It is a congenital defect in the integrity of the scrotal wall permitting egress of the testis to an ectopic extracorporeal location. It is a rare entity and only a few cases have been reported.[2] The cause of it is not fully understood yet. Orchidopexy is performed as soon as the patient is admitted following preoperative workup. The short-term prognosis is satisfactory, but follow-up to puberty is needed to be able to comment on the long-term complications.[3] Transverse testicular ectopia (TTE) is an anatomical abnormality in which both testes migrate toward the same hemi-scrotum. It is also known as crossed testicular ectopia, testicular pseudo-duplication, unilateral double testes and transverse aberrant testicular maldescent.

We present an extremely rare case of gastroschisis coexisting with scrotoschisis and transverse testicular ectopia in a term newborn managed at Ahmadu Bello University Teaching Hospital Zaria Kaduna, Nigeria.

Case Report

A 27-hour-old term baby boy referred from a secondary health centre in Kaduna, about 60 km from our institution with complaints of bowel evisceration through an anterior abdominal wall defect and extrusion of testes outside of the scrotum which were noticed at birth. The baby was delivered via a spontaneous vaginal delivery at home, supervised by a traditional birth attendant. He cried immediately after delivery. The mother is a 24-year-old house wife, now para 3 + 0 (all alive). She had no focused antenatal clinic visit;

Address for correspondence: Abubakar Yahaya
Department of Surgery, Ahmadu Bello University Teaching Hospital, Zaria, Nigeria
Email: dr.abubakaryahaya@gmail.com

Received: 19-05-2026 **Revised:** 25-07-2026 **Accepted:** 25-09-2026 **Available Online:** 08-11-2026

Access this article online

Quick Response Code:

Website: https://wwwafrjpaedsurg.com

DOI: https://doi.org/10.67481/ajps.v23i2.533

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: editor@afrjpaedsurg.com

How to cite this article: Yahaya A, Sholadoye TT, Anyanwu LJC, Ademuyiwa AO, Umar A. Coexistence of Gastroschisis, Scrotoschisis and Transverse Testicular Ectopia: A Case Report. Afr J Paediatr Surg. 2026;23(2):129-131. https://doi.org/10.67481/ajps.v23i2.533

however, an obstetric scan was done at four months which reported a viable single gestation with no abnormality.

The above scan was necessitated by a febrile illness for which the mother was treated with antimalarials and antibiotics at the primary health centre. The father is a 49-year-old farmer. No family history of similar presentation.



Figures 1: Gastroschisis and the testes hanging out through a right hemi-scrotal defect

Examination revealed a non-syndromic male neonate in obvious respiratory distress with central cyanosis, pink, febrile with a temperature of 37.9°C, anicteric and well hydrated. He had an intravenous cannula in-situ, weighed 2.7 kg with a random blood sugar level of 4.4 mmol/L. On abdominal examination, there was an anterior abdominal wall defect around the umbilical region with eviscerated small intestine that looked oedematous, thickened and lustreless. The umbilical cord was to the left of the intestine and tied with a thread, no residual membranous covering was seen.

A normal uncircumcised penis with a well-formed prepuce was seen. There was a defect located on the anteromedial aspect ofthe right hemi-scrotum, well circumscribed and oval in shape, measuring about 2 cm x 3 cm in diameter. Both testes extruded through the defect; they were pink with meconium stain. The left spermatic cord was palpable on the dorsal aspect of the root of the penis, crossing over to the right hemi-scrotal sac and lying alongside the right spermatic cord. Both spermatic cords extruded outside the right hemi-scrotal sac through the defect (Figure 1 and 2). The cords and testes had normal size and orientation. The left hemi-scrotal sac was well formed and empty. No other obvious anomaly was noted.

The baby was immediately commenced on oxygen and dextrose-containing intravenous fluid. The bowels were cleaned with warm normal saline and an improvised silo was applied. Due to the unstable condition of the child, the testes with their spermatic cords were also cleaned and covered with saline-soaked gauze. The plan was to perform a bilateral orchidopexy when baby was stable. Intravenous antibiotics, analgesics and other medications were commenced. The child was on nasogastric decompression and bladder drainage. He was nursed in an incubator; the silo was suspended and he was closely monitored. Serum electrolytes showed hyponatraemia and correction was commenced, complete blood count revealed leukocytosis.

The baby's condition remained unstable and he died on the second day of admission from clinically diagnosed neonatal sepsis. The possibility of an associated cardiac or renal anomaly was not considered as part of the presumed cause of death because we had no available supporting evidence.

Discussion

Conrad Wolffhart, an Alsatian humanist and theologist, reported the first case of an abdominal wall defect. He described an infant born in 1547 with a large extrusion of intestines from the abdomen.[4] The current prevalence rate of gastroschisis is 4.5 per 10,000 live births in the US. It disproportionately affects younger mothers, with the highest prevalence among mothers aged <20 years (15.7 per 10,000 live births).[1] Approximately 10% of infants with gastroschisis have intestinal stenosis or atresia[5] resulting from vascular insufficiency due to a volvulus or compression of the vascular pedicle by a narrowing abdominal ring.[1] Several embryologic hypotheses have been proposed to elucidate the pathogenesis of gastroschisis including a failure of differentiation of the embryonic mesenchyme due to a teratogenic exposure, rupture of the amniotic membrane at the base of the umbilical cord, abnormal involution of the right umbilical vein leading to impaired viability of surrounding mesenchyme, disruption of the right vitelline (yolk sac) artery, among others.[1] The entire above stated hypotheses are limited to the development of gastroschisis except for the failure of differentiation of the embryonic mesenchyme, which could explain a wall defect in other parts of the body. Hence, it better explains the occurrence of both gastroschisis and scrotoschisis in our patient. Gastroschisis is classified into simple and complex types based on the condition of the bowel. In simple gastroschisis, the bowel is in good condition with no intestinal complications. Complex gastroschisis, on the other hand, is that associated with congenital intestinal complications in the form of an atresia, perforation, ischemia, necrosis or volvulus. Closed or closing gastroschisis is a subset of complex gastroschisis, in which the abdominal wall defect closes around the prolapsed bowel.[1] It can be diagnosed on prenatal ultrasound scans as early as 12 weeks' gestation.[1] Management involves either a primary or staged reduction with an abdominal wall closure.

In isolation, scrotoschisis and transverse testicular ectopia are uncommon conditions. Their coexistence is rare and the association of the above two anomalies with gastroschisis is extremely rare, if any has ever been reported. Von der Leyen reported the first case of scrotoschisis in 1963[6] and Gongaware *et al*.,[7] reported the second case in 1991. Thereafter, a small number of cases have been documented globally,[5] in Africa [8] and in my homeland, Nigeria.[9] Its aetiology is not known but multiple theories have been postulated. Chun *et al*.,[7] suggested

that the future scrotal skin in the fetus helps the gubernaculum as a guideline for the descent of the testis into the scrotum and this implies that any defect in the future scrotal skin may lead to scrotoschisis. It is worthy of note to mention that the above experimental study was done in rats. He went on to say that the defect in scrotoschisis is medial, while the scrotal skin required for gubernaculum descent arises more laterally and posteriorly. Scrotoschisis could be unilateral or bilateral. Based on the site of extrusion, it could either be scrotal or inguinal (bubonoschisis).

Many theories have attempted an explanation of the mechanism of testicular descent. Although John Hunter provided the first classical description of testicular descent over 200 years ago,[10] the real mechanism of this process has not been satisfactorily resolved. No matter the mechanism of testicular descent, scrotoschisis requires the development of a scrotal wall defect resulting in an ectopic extra-corporeal testicular descent. To the best of our knowledge, the coexistence of gastroschisis, scrotoschisis and transverse testicular ectopia has not been reported. History may have this patient to be the first case ever reported. No theory has attempted to connect the coexistence of scrotoschisis and transverse testicular ectopia as an entity, let alone explaining the coexistence of the three anomalies as seen in our patient.

Even though our patient had the simple type of gastroschisis with a good prognosis, the mortality that we had could be explained by the delayed presentation (27th hour of life). Hence, the need for improved prenatal diagnosis and in-utero transfer to a centre with paediatric surgery expertise. In situations where the diagnosis is made following delivery, prompt referral to a paediatric surgeon is encouraged for better outcomes. The patient had a unilateral and scrotal scrotoschisis, if the child had presented early and was stable, we would have done the silo placement and orchidopexy at one sitting, then continued progressive reduction of the bowel.

Conclusion

The coexistence of gastroschisis, scrotoschisis and transverse testicular ectopia is life-threatening and a neonatal emergency. Emphasis is on resuscitation and management of the gastroschisis. Orchidopexy and scrotal repair for scrotoschisis and transverse testicular ectopia may be delayed. The role of educating the public on congenital anomalies, early recognition and immediate referral to a specialist centre, prompt intervention and genetic analysis of children with such conditions can never be over emphasized.

Consent

Oral and written informed consent were taken.

Conflicts of interest

Nil

Funding

Nil

Acknowledgment

We would like to acknowledge the parents, members of the Paediatric Surgery Unit and the management of Ahmadu Bello University Teaching Hospital Zaria, Kaduna, Nigeria.

References

1. Bhat V, Moront M, Bhandari V. Gastroschisis: A State-of-the-Art Review. Children. 2020; 7(302):1-182.
2. Haidar AM, Gharmool BM. Extracorporeal testicular ectopia through the inguinal canal: a case report. J Neonat Surg. 2013;2(1):10.
3. Ameh EA, Amoah JO, Awotula OP, Mbibu HN. Scrotoschisis, bilateral extracorporeal testicular ectopia and testicular torsion. Pediatr Surg Int. 2003;19:497–498.
4. Opitz JM, Feldkamp ML, Botto LD. An evolutionary and developmental biology approach to gastroschisis. Birth Defect Res. 2019; 111:294-311.
5. Chun K, St-Vil D. Scrotoschisis associated with contralateral meconium periorchitis. Journal of Pediatric Surgery. 1997; 32:864-866.
6. Fikri E, Alnaz FM, Alnaz ARM, Nurdiani. Left unilateral scrotoschisis in a newborn referred after vaginal delivery in midwife practice in a State Hospital in Medan, Indonesia. J Pediatr Surg Case Rep. 2023;93.
7. Gongaware RD, Sussman AK, Kraebber DM, Michigan S. Scrotoschisis as a mechanism for extracorporeal testicular ectopia. J Pediatr Surg 1991; 26:1430-1.
8. Kanowa MG, Tchongwang PN, Djeuga YI, Kangudia KS, Ngalamulume DT, Kanowa CC, *et al*. Prise en Charge du Scrotoschisis: à propos d'un cas à Douala. Health Res. Afr. 2024; 2(4):110-112.
9. Farinyaro AU, Mohammed AM, Anyanwu LC-J, AbdullahiLB. Scrotoschisis: A rare congenital urologic anomaly. Ped Urol Case Rep. 2015;2(2):17-21
10. Marshall FF, Elder JS, EDS. Mechanisms of testicular descent. In:Cryprorchidism and related Anomalies. New York: Praeger Publishers. 1982;9-26.