

COMMUNICATING HYDROCELE IN AN ADULT: CASE REPORT AND REVIEW OF LITERATUREBashir Musa Umar¹, Idowu Gabriel Ajiboye¹, Isa Hassan Muhammad²¹Department of Surgery, Gombe State University/State Specialists Hospital, Gombe State, Nigeria²Department of Radiology, Yobe State University/Yobe State University Teaching Hospital Damaturu, Yobe State, Nigeria³Department of Surgery, Bayero University Kano/Aminu Kano Teaching Hospital, Kano State, Nigeria**Corresponding Author:** *Dr Bashir Musa Umar, Email: mbashiru@gmail.com***Received:** 02-Apr-2026**Accepted:** 21-Apr-2026**Published:** 30-Apr-2026**Abstract**

Background: Communicating hydrocele is uncommon in adults and often results from an unrecognized or a neglected childhood patent processus vaginalis (PPV). Recurrence occurs when misdiagnosed and treated as vaginal hydrocele, underscoring the importance accurate pre-operative diagnosis. **Case report:** We present a case report of a 41-year-old man who presented to us with communicating hydrocele and was managed by PPV ligation and Lord's placcation via a trans-inguinal approach. **Conclusion:** Communicating hydrocele should be considered in adults presenting with inguinoscrotal swelling, especially when clinical features are atypical. A carefully planned surgical approach minimizes recurrence. Groin approach alone may be sufficient in selected patients.

Keywords: Communicating hydrocele, Patent processus vaginalis, Adult, Case report**Cite this article:** Umar BM, Ajiboye IG, Muhammad IH. **Communicating hydrocele in an adult: case report and review of literature.** Yob Med J.2026;2(1):60-65

Introduction

Hydrocele is the accumulation of fluid within the tunica vaginalis. A communicating hydrocele occurs when fluid from the peritoneal cavity passes through a patent processus vaginalis (PPV) which is a developmental structure, and accumulates within the tunica vaginalis.¹ Vaginal hydrocele on the other hand, which primarily intra-scrotal, is the fluid accumulation due to an imbalance of fluid production and absorption within the epithelial lining of the tunica.²

Because of its rarity, communicating hydrocele is easily missed. The approach in a misdiagnosed communicating hydrocele (scrotal approach) does not give access to the PPV, leading to recurrence. Therefore, recognition of this uncommon clinical entity is important for better treatment outcomes.³

Case report

A 41-year-old man presented to us with the complaint of right scrotal swelling which was noticed about 2 years prior to presentation. The swelling increases during day time but does not reduce completely when lying supine or when manipulated. It was painless. He also noticed that the scrotal swelling occasionally extends to the groin area. The patient could not remember noting a swelling in the groin or scrotum during childhood. No symptoms suggestive of intestinal obstruction and no lower urinary tract symptoms. No abdominal swelling or chest symptoms and no known co-morbidities.

Abdominal examination was normal. He has normal male external genitalia with a normal testis in the left scrotum. There was a right inguinoscrotal swelling which has a palpable cough impulse. The swelling was soft, non-tender and has no differential warmth. The swelling was not reducible and the ipsilateral testis could not be separated from the swelling. A clinical diagnosis of non-reducible right inguinoscrotal hernia was made keeping in mind the possibility of a communicating hydrocele. Abdominal ultrasonography reported normal study. Groin and scrotal ultrasound scan showed

fluid within the scrotum and extending into the inguinal region, suggesting a communicating hydrocele. The serum electrolytes, urea and creatinine were within normal limits. Full blood count parameters were also adequate.

Informed consent for surgery was obtained.

The patient was placed in a supine position after spinal anaesthesia was given. Surgical access was via an oblique right groin incision. A fluid-filled sac was noticed upon opening of the anterior wall of the inguinal canal, consistent with an encysted hydrocele of the cord. However, when the sac was gently separated from the cord structures it was noticed to be continuous with fluid in the tunica vaginalis in the scrotum medially and to the peritoneal cavity at the deep ring laterally (Figure 1). The deep ring was also wide. Fluid from the tunica could be forced through the sac into the peritoneal cavity. The patient was instructed to cough and there were no bowel loops herniating into this transparent sac.

The processus was double clamped and high-ligated using vicryl 1 suture. It was then excised (Figure 2). The lateral end of the cut processus retracted into the peritoneal cavity through the deep ring. The patulous deep ring was tightened using nylon 1 suture. The fluid in the right scrotum was suctioned out and the testis was brought to the groin wound. The tunica was then everted (Lord's placcation) and the testis returned to the scrotum. The wound was closed in layers followed by application of scrotal support.



Figure 1: Demonstration of the Patent Processus Vaginalis



Figure 2: Clamping of the Patent Processus before ligation

The patient recovered satisfactorily; the scrotal support was removed on postoperative day 5. Histopathology of the excised processus showed a benign wall lined by a single layer epithelium. He is currently on follow up at the surgical outpatient clinic.

Discussion

Communicating hydrocele in the adult is an uncommon clinical entity seen in patients with patent processus vaginalis (PPV).¹ A PPV is a communication between the peritoneal cavity and the scrotum occurring due to failure of closure of this developmental structure. During intrauterine

life, the parietal peritoneum is drawn into the inguinal canal and the scrotum by the descent of the testes from the posterior abdominal wall. It normally obliterates before or shortly after birth; it may persist and result in communicating hydrocele or hernia. It is proposed that transforming growth factor beta1 (TGFβ1), a potent fibrogenic agent stimulates fibrosis and closure of the processus vaginalis.² The processus is patent in 80-90% of term male infants at birth and by age 2 years it remains un-obliterated in about 25-40% of these children. Despite this high proportion, hydroceles are only clinically observed in 1-5% of children.^{2,3}

Adult communicating hydrocele has a general prevalence of about 1% of adult males, mostly following an unrecognized or neglected PPV during childhood.⁴

Risk factors for failure of closure of the processus vaginalis include low birth weight, breech presentation, prematurity and maternal use of progestin.¹ Hydroceles have been classified as primary and secondary. Primary hydroceles are those without primary pathology of the testes; they are commonly of congenital origin and may be divided into communicating or non-communicating types (i.e. with or without patency between peritoneum and scrotum, allowing peritoneal fluid to flow particularly during Valsalva maneuver). Secondary hydroceles are caused by conditions such as testicular torsion, torsion of the appendix testis, infections/infestations (e.g. epididymitis or filariasis), previous surgery (e.g. varicolectomy) or malignancy.^{2,3} Thus, while hydroceles are benign swellings, they should be evaluated thoroughly, as they can be associated with underlying scrotal pathology. Less commonly, a non-communicating, isolated fluid collection may occur along the pathway of the processus in form of encysted hydrocele of

the cord in males, or as cyst of the canal of Nuck in females.⁵

The diameter of PPV is typically much smaller than that seen with an indirect inguinal hernia, and therefore only peritoneal fluid passes into the scrotum without accompanying intraabdominal organs. These patients presents with painless scrotal swelling that increases over the course of the day and reduces or even disappear while sleeping or assuming recumbent position, as fluid returns to the peritoneal cavity as in the case of our patient.³ Often, PPV enlarges over time and results in herniation of a viscus. The chance of developing an inguinal hernia is four times higher in children with un-obliterated and untreated PPV than in children without it. In some patients the size remains small and develops into adult type communicating hydrocoele as in the case of our patient.⁶

Egharevba et al reported a case of a 36-year-old Nigerian man with a recurrent left-sided giant communicating hydrocele which developed after 2 previous attempts at open drainage by hydrocelectomy via scrotal approach. This type of presentation raises the suspicion of a possible unresolved PPV or an unidentified testicular pathology. The authors confirmed the diagnosis by untrasonography and the patient had surgery through both groin and trans-scrotal approaches.⁷

A close differential diagnosis of a communicating hydrocele is the abdominoscrotal hydrocele which is the collection of fluid in the tunica vaginalis that extends from the scrotum to the abdominal cavity in a blind ending sac. The hydrocele sac is often tense and produces a dumbbell or hourglass shape.³ Khalili et al reported a case of a slow growing mass in lower abdomen of a small boy whose abdominal ultrasonography and CT scan demonstrated a large intraabdominopelvic cystic swelling extending to the inguinal canal and the

scrotum. At operation a large abdominoscrotal hydrocele was found and excised.⁸

Confirming the diagnosis of communicating hydrocele by ultrasonography is important for planning treatment and for identifying complications. Complications of hydroceles include infection (e.g. pyocele), haematocele, testicular atrophy, infertility, hydrocele rupture and hernia formation.^{9, 10} Ultrasonography of the groin and scrotum is highly sensitive. Common features include anechoic fluid collections anterior to the testis with a cephalic narrow peritoneal communication. Occasionally, low-level echoes, suggests protein aggregates or cholesterol crystals and not necessarily superimposed infection or hemorrhage. It is important to perform ultrasound examinations in both standing and supine positions, as communicating hydroceles may reduce when the patient is laying down.^{10, 11}

When a diagnosis of a communicating hydrocele is missed, a '*scrotal approach*' alone will be adopted and this will not give access to the PPV in the inguinal canal. This may leading to recurrence.^{1, 7} The choice of a surgical approach depends on the specific characteristics of the hydrocele. With *groin approach* the PPV is separated, ligated and excised. This takes care of the communication. A second incision is normally made in the scrotum to take care of the scrotal component.¹² In the case of our patient, the scrotal fluid was drained through the inguinal incision and the testis was brought into the wound where the tunica was everted (Lord's placcation). This obviated the need for a second scrotal incision.

Lord's placcation is a favored technique for thin-walled hydroceles as in the case of our patient. This serves to prevent the development of a non-communicating hydrocele in future. Tightening the enlarged internal ring is recommended if it is noticed

to be enlarged as in our patient.⁵ Another indication for inguinal approach is the presence of suspicion for concomitant malignancy. In this case, an inguinal approach will allow control of the spermatic cord in preparation for radical orchiectomy. The combination of groin and scrotal approaches is a safer means of addressing communicating hydrocele especially in recurrent or giant hydroceles which is not the case in our patient.^{5, 7, 12}

In the *trans-scrotal approach*, the hydrocele is accessed through either a median raphe or a transverse unilateral scrotal incision. The sac is dissected and delivered intact. An opening in the sac is made away from the testis, epididymis, and cord structures and the fluid is drained. The hydrocele sac is then opened and repaired by one of the following techniques: (i) The Jaboulay “bottle-neck” technique; it is useful for large, floppy, long-standing, thick-walled, hydrocele sacs. It is performed by excising the sac and leaving a larger margin of excision between the edge of the sac and the testis to allow for sewing the edges of the sac together behind and without compressing the cord. (ii) Lord's Plication technique is suitable for thin-walled hydroceles, with no redundant sac be left in the scrotum. It is performed by cauterizing or oversewing the cut edges of the sac, and using interrupted, radially placed sutures to plicate the sac. The scrotal skin is then closed with or without drain.^{12, 13, 14}

Follow up of patients after surgery for hydrocele is essential. At least one postoperative follow-up visit is recommended for straight forward hydroceles.⁵ In patients managed for long standing or recurrent hydroceles, patients with hydrocele due to significant testicular pathology, and in infants, a more prolonged follow-up evaluation is indicated: bi-weekly, monthly, or 2 to 3 monthly to ensure optimal

recovery and restoration or maintenance of normal testicular size and architecture.^{2, 5}

Conclusion

Communicating hydrocele is uncommon in adults. It mostly follows an unrecognized or neglected childhood PPV. All hydroceles should be evaluated thoroughly. Accurate pre-operative diagnosis is important in determining choice of surgical approach which is key to preventing recurrence.

Consent: Written informed consent to publish this case including clinical photographs was obtained from the patient prior to writing of this manuscript.

Financial Sponsorship: None

Conflict of interests: None

References

1. Huzaifa M, Moreno MA. Hydrocele. StatPearls [Internet] Treasure Island (FL): StatPearls Publishing; Updated: 7/3/2023. Accessed: Saturday 20th, March, 2026. <https://www.statpearls.com/articlelibrary/viewarticle/23067/>
2. Mathews RI, Davis K, Kim ED, Sabanegh ES, Du Bois JJ, Lee SL, et al. Hydrocele. In: Medscape Tools & Reference - Urology. Updated: June 20, 2023. <https://emedicine.medscape.com/article/438724-overview> Accessed: Saturday 28th, March, 2026.
3. Kryger JV, Jarosz SL, Acute and Chronic Scrotal Swelling. In: Kliegman RM, Toth H, Bordini BJ, Basel D, Eds: *Nelson Pediatric Symptom - based Diagnosis: Common Diseases and their Mimics* (2nd Ed), Elsevier, 2023, p 409-420.e2, ISBN 9780323761741, doi: 10.1016/B978-0-323-76174-1.00024-9.
4. Akpo EE. Giant hydrocele – An epitome of neglect *Afr Health Sci.* 2005;5:343–4
5. Ortenberg J, Roth CC, Mathews RI. Pediatric Hydrocele and Hernia Surgery Treatment & Management. In: MedscapeTools & Reference – Pediatrics: Surgery. Updated: May 14, 2024 <https://emedicine.medscape.com/articl>

- [e/1015147-overview](#) Accessed: Saturday 28th, March, 2026.
6. van Veen RN, van Wessem KJ, Halm JA, Simons MP, Plaisier PW, Jeekel J, Lange JF. Patent processus vaginalis in the adult as a risk factor for the occurrence of indirect inguinal hernia. *Surg Endosc.* 2007; 21(2):202-205. doi: 10.1007/s00464-006-0012-9.
 7. Egharevba, PA, Cassell AK, Okunlola AI, Omisano OA. Giant Communicating Hydrocele in a 36-Year-Old Nigerian Man. *Nigerian Journal of Medicine* 2021; 30(2): 212-214. doi: 10.4103/NJM.NJM_206_20
 8. Khalili M, GholamzadehBaeis M, Rouzrokh M. Abdominoscrotal hydrocele: A case report. *Urol Case Rep.* 2020; 13(32):101254. doi: 10.1016/j.eucr.2020.101254.
 9. Dandapat MC, Padhi NC, Patra AP. Effect of hydrocele on testis and spermatogenesis. *Br J Surg.* 1990; 77(11):1293-1294. doi: 10.1002/bjs.1800771132.
 10. Valentino M, Bertolotto M, Ruggirello M, Pavlica P, Barozzi L, Rossi C. Cystic lesions and scrotal fluid collections in adults: Ultrasound findings. *J Ultrasound.* 2011; 14(4):208-215. doi: 10.1016/j.jus.2011.10.008.
 11. Williamson ZC, Epelman M, Daneman A, Victoria T, Chauvin N, Oudjhane K, et al. Imaging of the Inguinal Canal in Children, Current Problems in Diagnostic Radiology. 2013; 42(4):164-179, doi: 10.1067/j.cpradiol.2013.03.002.
 12. Kavoussi PK, Costabile RA. Surgery of the Scrotum and Seminal Vesicles. In: Wein J, Kavoussi LR, Partin AW, Novick AC, Peters CA (Editors). *Campbell-Walsh Urology.* 10th ed. Philadelphia, Elsevier Saunders. 2012; p1009-1010 ISBN: 978-1-1460-6911-9
 13. Jain Y, Lanjewar R, Chauhan S. Encysted Hydrocele of Spermatic Cord in Adult: A Rare Case Report. *Cureus.* 2023; 27(10)15:e47782. doi: 10.7759/cureus.47782.
 14. Andrews EW. XI. The "Bottle Operation" Method for the Radical Cure of Hydrocele. *Ann Surg.* 1907; 46(6):915-918. doi: 10.1097/00000658-190712000-00011.