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# TWICE THE TROUBLE: A RARE CASE OF CONCURRENT SCROTAL AND ENCYSTED SPERMATIC CORD HYDROCELE-A RADIOLOGICAL PERSPECTIVE

Radio-Diagnosis

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## ABSTRACT

Hydroceles are among the most common causes of painless scrotal swelling, typically resulting from the accumulation of serous fluid within the tunica vaginalis. In contrast, encysted hydroceles of the spermatic cord are relatively rare and pose diagnostic confusion due to their atypical location and presentation, particularly in infants. The simultaneous presence of a scrotal hydrocele and an encysted spermatic cord hydrocele is exceedingly rare. This second pathology may mimic other inguinoscrotal conditions such as inguinal hernias, cord lipomas, or lymphadenopathy, potentially leading to misdiagnosis and inappropriate surgical planning if not correctly identified. We present a rare case of dual hydrocele (simultaneous presence of a scrotal hydrocele and an encysted spermatic cord hydrocele) in aninfant, highlighting the role of high-resolution ultrasonography in accurately diagnosing both entities. Recognizing this rare coexistence is crucial for clinicians and radiologists to avoid diagnostic pitfalls and to plan optimal surgical intervention. Our report underscores the diagnostic clarity that imaging can provide in complex presentations and contributes to the sparse body of literature on this rare dual hydrocele entity in infants.

## KEYWORDS

Dual hydrocele, encysted spermatic cord hydrocele, scrotal hydrocele, scrotal imaging, ultrasound.

## INTRODUCTION:

Hydroceles represent fluid collections within the tunica vaginalis or along the spermatic cord. While scrotal hydroceles are commonly encountered, encysted spermatic cord hydroceles are uncommon. The synchronous occurrence of both conditions in the same patient is exceedingly rare and may pose a diagnostic challenge. Radiological imaging, particularly ultrasonography, plays a pivotal role in differentiation and surgical planning.

### Case Presentation:

A 2-month-old male infant presented to the outpatient department with complaints of painless right-sided scrotal swelling and a palpable mass in the right inguinal region noted by parents over the past one month. The swellings were non-reducible and did not vary with position or crying.

On physical examination, a soft, cystic, non-tender swelling was noted in the right hemiscrotum and a separate, oval, firm, non-compressible mass was palpated along the right inguinal canal. Transillumination was positive in the scrotal swelling.

High-resolution ultrasonography of the scrotum and inguinal canal revealed two distinct anechoic fluid collections.

The first was a well-defined, thin-walled, anechoic lesion confined to the scrotum surrounding the testis, consistent with a scrotal hydrocele. The second was a fusiform, anechoic, encapsulated lesion located superior to the testis and extending into the inguinal canal, suggestive of an encysted spermatic cord hydrocele. Both lesions showed no solid components within and no color flow on color Doppler imaging. A thin septa was seen in the fusiform lesion.

No communication with the peritoneal cavity was identified, ruling out a communicating hydrocele. The testes and epididymis appeared normal bilaterally.

### REPRESENTATIVE IMAGE OF THIS CASE

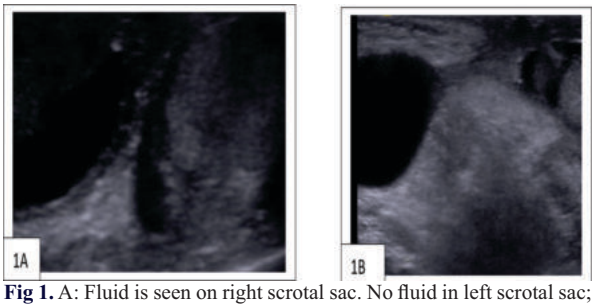


**Fig 1.** A: Fluid is seen on right scrotal sac. No fluid in left scrotal sac; left testis appears normal. B: image shows simultaneous presence of fluid in right scrotal sac & a separate fluid collection seen in right inguinal region away from the sac, having no communication between this two.

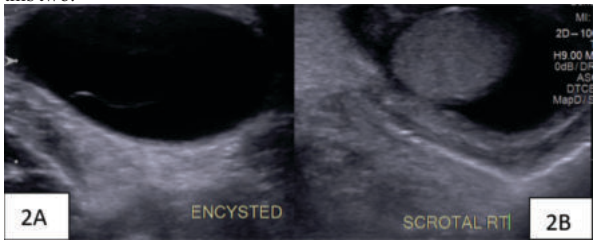


**Fig. 2.** A: Fusiform collection with thin internal septa like structure seen in right inguinal region. B. Fluid collection in surrounding the right testis. The right testis appears normal.

## DISCUSSION:

Hydroceles are fluid-filled collections between the parietal and visceral layers of the tunica vaginalis, commonly observed in adult males. They are typically painless, non-reducible, and transilluminant swellings. In contrast, hydroceles involving the spermatic cord—particularly encysted hydroceles—are uncommon. The concurrent presentation of both a scrotal hydrocele and an encysted spermatic cord hydrocele, as seen in our patient, is exceedingly rare and has been infrequently documented in existing literature.

During the period of descent of the testes from the retroperitoneum to the scrotum in the embryonic period, which occurs between 28 and 32 weeks, it carries two layers of the peritoneum. This structure is known as processus vaginalis. This processus vaginalis usually closes proximally to the level of the internal inguinal ring. Distally, it closes above the epididymis and the segment present between these points undergoes involution [1]. A spermatic cord hydrocele results from the failure of proper closure at the two ends of the processus vaginalis [2]. Over the time, the processus vaginalis undergoes involution, leaving only the distal segment, which ultimately forms the tunica vaginalis. Encysted hydrocele occurs when both ends are closed, but the segment in between fails to undergo involution.

A scrotal hydrocele results from accumulation of fluid in the tunica vaginalis surrounding the testis, due to either excessive fluid production or defective resorption.

From a clinical perspective, encysted cord hydroceles often mimic other inguinal pathologies, including inguinal hernias, lipomas of the cord, or lymphadenopathy, especially when in isolation. In such cases, high-resolution ultrasonography becomes the mainstay of diagnosis. It allows for precise anatomical localization, differentiation from other

pathologies, and confirmation of the nature and extent of fluid collections.

The absence of internal vascularity or solid components excluded possibilities like neoplastic lesions or infected collections in our case. Additionally, the lack of peristalsis or communication with the peritoneal cavity helped rule out hernia, while the avascular nature differentiated it from vascular anomalies or lymph nodes.

The primary differentials considered in such cases include:
Inguinal hernia: Typically reducible, may show bowel or omental contents with peristalsis or fat echogenicity; communication with peritoneum is usually present.

Spermatic cord lipoma: Echogenic, solid, fat-density lesion with no fluid characteristics.

Lymphadenopathy or lymphatic malformation: Solid or complex cystic lesions, possibly with vascularity.

Funniculitis or epididymal cyst: Inflammatory changes or cysts related to the epididymis, often closer to the testicular pole.

Accurate preoperative diagnosis is crucial as mistaking an encysted cord hydrocele for a hernia may lead to unnecessary or incorrect surgical procedures. Correct imaging interpretation enables tailored surgical approaches, reducing operative complications.

Dual hydroceles are rarely reported in the paediatric age group. Most case reports focus on isolated scrotal hydroceles or isolated spermatic cord hydroceles. Hence, this case contributes valuable insights to the limited paediatric literature. During radiology practise since last 12 years we did not come across such dual existence of hydrocele. We also did not get any such reported case in various database. Therefore we assume that our case may be the first reported case of such dual hydrocele.

## CONCLUSION:

This case serves as a reminder of the anatomical complexities and embryological remnants that can present as atypical inguinoscrotal swellings.

High-resolution ultrasonography offers a non-invasive, highly informative modality to differentiate and localize such lesions accurately. Radiologists must maintain a high index of suspicion when evaluating scrotal or inguinal swellings to identify rare dual pathologies. Recognizing such uncommon presentations is essential to ensure proper surgical planning and optimal patient outcomes.

## REFERENCES

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