



Unilateral Fetal Hydroceles in Utero

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Abstract

Fetal hydrocele is a condition in which fluid accumulates in the scrotum of male fetuses. It is often identified through ultrasound during pregnancy and is relatively common, especially in the third trimester. Through a clinical case, we illustrate the characteristic ultrasound imaging of fetal hydroceles and their intrascrotal content.

Keywords: *fetal hydrocele, ultrasound imaging.*

Introduction

The prevalence of fetal hydrocele is relatively common. In the majority of cases, this condition is benign and tends to disappear spontaneously in the months following birth. Fetal ultrasound is a key examination for prenatal diagnosis.

Materials and Methods

We report the case of a 34-year-old female patient, G2P2, admitted for term delivery at 39 weeks of gestation. Ultrasound revealed an unusual cystic structure at the lower end of the fetal trunk (Fig. 1), suggesting an enlarged scrotal sac consistent with a unilateral hydrocele. The presence of intrascrotal testes and an epididymis surrounded by hydrocele fluid was noted. The fetal hydrocele was confirmed at birth (Fig. 2).

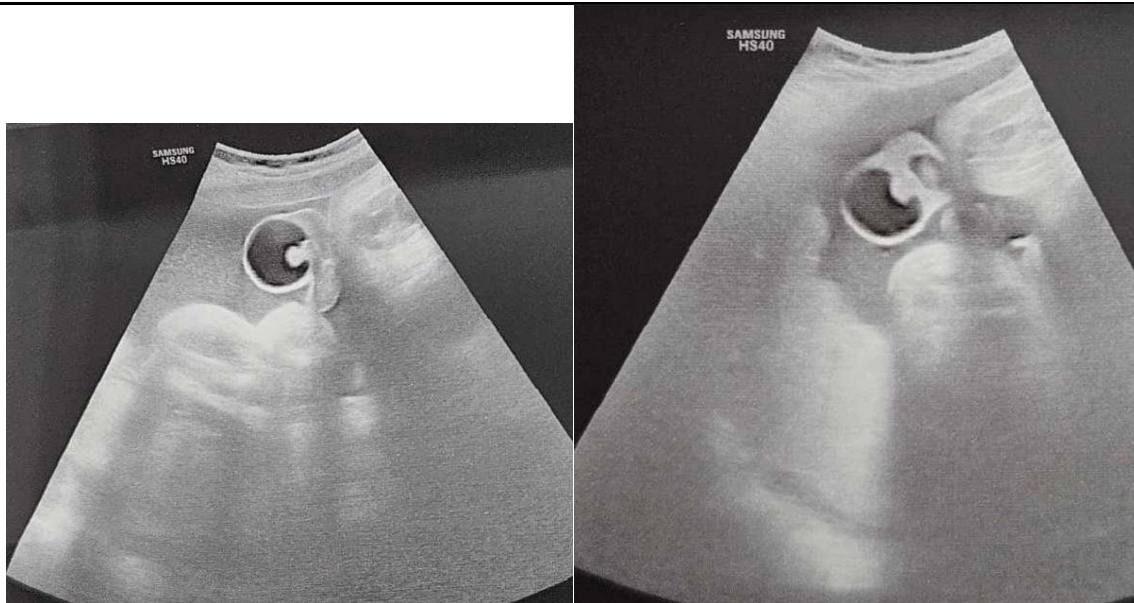


Fig1



Fig2

Discussion

Ultrasonography is an effective tool for diagnosing fetal anomalies, including reported cases of prenatal urologic abnormalities. Advances in gray-scale imaging have greatly enhanced the accuracy of identifying normal fetal anatomy and genitalia(1).

Fetal hydroceles are often unilateral, meaning they typically occur on one side, although bilateral cases can also be observed(2). The presence of a hydrocele is generally considered a normal physiological phenomenon, particularly in the absence of other abnormalities(2).

A hydrocele is the abnormal accumulation of serous fluid between the two layers of the tunica vaginalis surrounding the testis. It can be either congenital or acquired. Congenital hydrocele occurs when the processus vaginalis fails to close. During development, the testes form retroperitoneally in the abdomen and descend into the scrotum through the inguinal canal by the third gestational week. This descent is accompanied by a fold of the peritoneum, the processus vaginalis. Normally, the upper part of the processus vaginalis closes, while the lower part persists as the tunica vaginalis, covering the anterior, lateral, and medial sides of the testes. If the upper part remains open, fluid from the peritoneal cavity can accumulate in the tunica vaginalis, leading to congenital hydrocele.

Hydroceles are classified into two types: primary and secondary(3). Primary hydrocele occurs when, during normal development, the processus vaginalis closes at birth or within the first 1-2 years of life, severing the connection between the abdomen and the scrotum. However, the distal portion persists as the tunica vaginalis, leaving a potential space where fluid can accumulate, leading to the formation of a hydrocele. The condition is categorized into four types, depending on the location of the failure in the closure of the processus vaginalis. Secondary hydrocele develops as a result of underlying conditions such as infections (e.g., filariasis, tuberculosis of the epididymis, syphilis), injury (e.g., trauma or post-surgical complications), or malignancy. These hydroceles are generally small, except in cases of filariasis, where the hydrocele can become considerably larger.

Fetal hydrocele is typically diagnosed by prenatal ultrasound. The main ultrasound findings are: Anechoic fluid effusion around the testicle, often unilateral, Normal testicle in size and echostructure, pushed to the bottom of the scrotum, Absence of intra-fluid vascularization on Doppler(1). In some cases, fetal MRI may also be utilized, showing a hyperintense fluid layer around the scrotum(4).

Management depends on the size of the hydrocele and its evolution during pregnancy. Close ultrasound monitoring is necessary. In the case of a very large hydrocele, an in utero puncture may be discussed to prevent complications such as testicular torsion. After birth, most hydroceles regress spontaneously within the first 2 years of life. Surgery is rarely necessary, except in cases of persistence beyond 2 years or recurrence.

Conclusion

Ultrasound is the key examination for diagnosing a fetal hydrocele, allowing its severity to be assessed and for guiding management. Ultrasound monitoring is essential during pregnancy and after birth.

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