International Journal of Academic Health and Medical Research (IJAHMR)
ISSN: 2643-9824
Vol. 8 Issue 1 January - 2024, Pages: 11-13

Antenatal diagnosis of duodenal atresia in twin pregnancy with polyhydramnios of one twin

N. Mekkaoui*, H.Taghzouti* , M.Bendahhou Idrissi* , M.K.Saoud*,N. Mamouni*, S. Errarhay*, C. Bouchikhi*, A.Banani*

Department of Gynecology and obstetrics I, Hassan II university hospital, Faculty of Medicine and Pharmacy of Fez, Sidi Mohammed Ben Abdellah University, Fez, Morocco

Corresponding author: Mekkaoui Nour-El Houda, nourelhouda.mekkaoui@usmba.ac.ma

Abstract: *Duodenal atresia is one of the most common congenital anomalies. Perinatal ultrasound may be the first diagnostic test in the assessment of the disorder. Polyhydramnios along with the classic finding double bubble reflecting a dilated proximal duodenum and stomach are virtually pathognomonic for the diagnosis. It is one of the most common anomalies in newborns, and represents almost half of all cases of neonatal intestinal obstruction. This is an anomaly that responds well to surgical treatment. We report a case of a patient hospitalized for threatened preterm labour at 8 months of pregnancy in whom duodenal atresia was suspected in a twin on ultrasound and confirmed after delivery.*

Keywords : Duodenal atresia , Antenatal diagnosis, obstetric ultrasound, surgical treatment

Introduction :

Duodenal atresia is the most common type of congenital duodenal obstruction and occurs in 1 per 5000–10,000 live births **(1)**. Duodenal atresia is an embryopathy which affects the cranial intestine and which results in a complete absence of the duodenal lumen.

It is due to failure of recanalisation of epithelial solid cord or excessive endodermal proliferation **(2)**. About half of fetuses with duodenal atresia have other associated anomalies, and these associations often contribute to morbidity and mortality.

The prenatal diagnosis of duodenal atresia can be evoked by ultrasound when highlighting the double bubble sign indicating a dilated stomach and duodenum filled with fluid, as well as the visualization of polyhydramnios **(3)**. After birth, the imaging diagnosis is usually made by a neonatal radiograph showing the same double bubble sign, due to a distended gas-filled stomach and duodenal bulb **(4-5)**. Thus, the antenatal diagnosis of DA helps to reduce neonatal morbidity and mortality. DA can be fatal unless promptly diagnosed and treated surgically.

Case report:

Patient aged 29, without notable history, 3rd procedure, 2nd parity.

Current pregnancy not monitored, admitted for treatment of pyelonephritis associated with a threatened preterm labour at 8 months of pregnancy.

Obstetric ultrasound reveals an evolving twin pregnancy, monochorionic biamniotic, twin A: breech presentation, amniotic fluid of normal quantity, estimated weight at 1500g, twin B: breech presentation, presence of polyhydramnios, with presence of a double bubble image suggestive of duodenal atresia, weight estimate at 1800g, Dopplers are normal

Figure 1: Obstetric ultrasound: Double bubble sign with polyhydramnios

Biological assessment: WBC: 13000, CRP at 103, cytobacteriological urinalysis +, normal renal function
Patient benefited from intravenous bioantibiotherapy, tocolysis, and corticosteroid therapy for fetal maturation.
the patient gave birth the next day, first twin born with respiratory distress, his birth weight was 1200g, died after 48 hours. The second twin with a birth weight of 1600 g, had a thoraco-abdominal radiography showing a double bubble appearance confirming the duodenal atresia suspected prenatally. newborn died 3 days after birth in a context of prematurity.

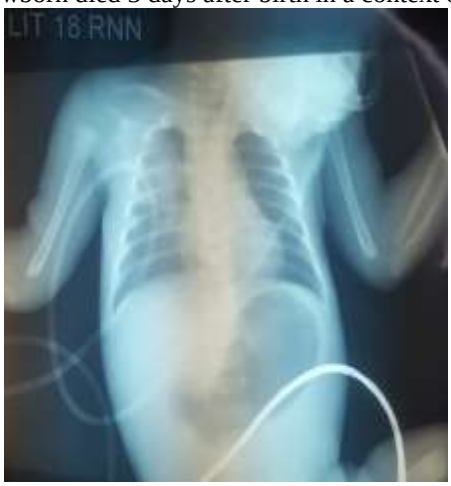

Figure 2: Thoraco-abdominal radiography : confirmation of the double bubble sign

Discussion

Duodenal atresia is an embryopathy which affects the cranial intestine **(6)** and which results in a complete absence of the duodenal lumen. Vascular abnormalities, nerve cell migration abnormalities, and defective recanalization of the duodenal lumen could be the cause of atresia, but the exact cause remains unknown.
Associated malformations are common and vary depending on the series, 38% for Bailey, namely Down syndrome, congenital heart disease, digestive and biliopancreatic malformations, etc. The mortality rate is even higher among newborns with three or more
abnormalities associated with overall survival of 40 to 77%. **(3).**
Antenatal ultrasound diagnosis can be made in 50% of occlusions;
Congenital duodenal, Ultrasound signs are:

- Polyhydramnios: is the most common sign, it is observed in 17-75% of cases, alone

does not exclude the diagnosis, but signals the alarm and encourages repeat examinations ultrasound.

- The double bubble sign: is characteristic on the cross section upper abdomen revealing

two well-defined fluid images,corresponding to the stomach and the initial part of the dilated duodenum, when the continuity between the stomach and the duodenum is highlighted, we observe an image in hourglass. It is necessary to check the permanence of these images during checks successive to be able to confirm the diagnosis, in fact we can observe images transients of gastric or even gastroduodenal dilatation indicating any simply a fetus vomiting or visualizing peristaltic movements intestinal.
Prenatal diagnosis of atresia of the duodenum allows planning of childbirth, resuscitation emergency and rapid surgical intervention for the patient.
Ultrasonography findings are sufficient to make diagnosis; however, MRI helps to exclude multiple intestinal atresias which has different postnatal prognosis and management **(7)**.
The postnatal diagnosis is made by thoraco-abdominal radiography when visualizing a double bubble appearance and the absence of air downstream of the obstruction. the presence of distal air is in favor of incomplete obstacle and cannot exclude malrotation with volvulus which indicates upper digestive opacification **(8).**
Management involves neonatal resuscitation and surgical correction in the neonatal period. Surgical treatment includes duodeno-duodenostomy and duodeno-jejunostomy and has excellent prognosis in isolated cases. Postoperative complications are rare, but late complications (megaduodenum, blind loop syndrome, duodeno-gastric reflux, esophagitis, pancreatitis, cholecystitis and cholelithiasis) occur in very rare cases **(9).**

Conclusion

Duodenal atresias are the most common causes of occlusion high neonatal, whose prognosis has evolved considerably in recent decades, with a survival rate currently of 95%, the associated malformations especially cardiac, the prematurity and low birth weight are the main prognostic factors. Prenatal diagnosis of atresia of theduodenum allows planning of childbirth, resuscitation emergency and rapid surgical intervention for the patient.

References

1. Holcomb G.W., Murphy J.P., St Peter S.D. *Shwan Holcomb and Ashcraft's Pediatric Surgery.* Elsevier; Edinburgh, UK: 2015.
2. Gossman W, Eovaldi BJ, Cohen HL. Duodenal Atresia And Stenosis. StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing. 2019 May 19.
3.Osifo OD. Duodenal Obstruction: Etiology, morbidity and mortality among Edo State Children. Nigeria. *Afr J Biomed Res.* 2009; 12(3):193–197
4. Chirdan LB, Uba AF, Pam SD. Intestinal atresia: Management problems in a developing country. *Pediatr Surg Int.* 2004;20(11-12):834–837.
5.Pariente G, Landau D, Aviram M, Hershkovitz R. Prenatal diagnosis of a rare sonographic appearance of duodenal atresia: report of 2 cases and literature review. *J Ultrasound,Med.* 2012;31 (11):1829–1833.
6.Kshirsafar AY, Sangitsingh R, Vasisth Gauray, Nikam Yogesh P. Duodenal stenosis in a child. *Afr J Pediatr Surg.* 2011;8(1):92–94.
7.Veyrac C, Couture A, Saguintaah M, Baud C. MRI of fetal GI tract abnormalities. Abdom Imaging. 2004 Jul-Aug;29(4):411-20.
8. Moran Penco JM, Cardenal Murillo J. Anomalies of intestinal rotation and fixation: consequences of late diagnosis beyond two years of age. *Pediatr Surg Int.* 2007 Aug;23(8):723–30. Epub 2007 Jun 27.
9. Mandhan P, Rathod KJ, Sankhla D. Late Presentation of a Congenital Intrinsic Duodenal Obstruction in a Patient with Anorectal Malformation. Surg Sci. 2013; 4(7):329–331.