

Figure 2. Ultrasound images, in the sagittal plane, showing structural disorganization of the abnormal fetus (A), with absence of the cephalic pole, no upper or lower limb buds, only rudimentary cardiac tissue, and hydrops fetalis. Spectral Doppler analysis detected no fetal cardiac activity (B).

subject to various complications, the rarest of which is an acardiac fetus, a complication seen in only 1% of all monochorionic twin pregnancies⁽⁴⁾. Although the pathophysiology of an acardiac twin is not well known, it is believed that there are vascular anastomoses that divert blood from the morphologically normal twin to the acardiac twin, a condition known as twin reversed arterial perfusion. The acardiac twin almost always presents involution of the brain, together with the absence or malformation of other organs (Figure 2). The normal twin can suffer complications such as heart failure, polyhydramnios, hydrops fetalis, and growth restriction, as well as being at high risk for fetal death⁽⁴⁻⁶⁾.

Approximately 20% of acardiac fetuses have vestiges of cardiac tissue or a rudimentary heart. Therefore, it would be correct to call them pseudoacardiac fetuses. That makes the case reported here even more rare, because it involves a pseudoacardiac twin^(4,6).

The morphological diagnosis of an acardiac twin is made by fetal ultrasound and is based on the following criteria⁽⁶⁾: monochorionic twin pregnancy; reverse flow in the umbilical cord and descending aorta; presence of arterio-arterial anastomoses; and partial or complete absence of the heart in one of the fetuses. An acardiac twin can sometimes be confused with a teratoma. The two can be differentiated by identifying the umbilical cord and some degree of organization of the body of the acardiac fetus⁽⁶⁾.

In 50–75% of cases of an acardiac twin, the use of the watchful waiting strategy is associated with the death of the structurally normal twin, due to heart failure and hydrops fetalis. In the case presented here, the pregnancy was monitored to term through the use of serial examinations, and there were no complications for the structurally normal fetus or for the mother. The treatment, when necessary, is still controversial. It involves blocking the blood flow to the acardiac twin if the structurally normal twin shows some impairment. The main surgical techniques are aimed at occlusion of the umbilical cord—by ligation

with a suture, clamping with bipolar forceps, photocoagulation, or ligation/section of the cord—or obliteration of the circulation with absolute alcohol. The survival rate for the structurally normal fetus can be as high as 75% when some intervention is implemented^(6,7).

An acardiac fetus is a rare complication of multiple monochorionic pregnancies and can be diagnosed through the use of a widely accessible method. Early identification of an acardiac twin can avert a fatal outcome for the structurally normal twin.

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<http://dx.doi.org/10.1590/0100-3984.2016.0133>

Post-traumatic intraosseous leptomeningeal cyst

Dear Editor,

A 22-year-old female patient sought treatment at our facility with a three-year history of progressive left retroauricular bulging accompanied by mild pain, with no need for analgesics, and no other complaints. She also reported having suffered a head injury from a motor vehicle accident at six months of age. Computed tomography (CT) and magnetic resonance imaging

(MRI) scans of the cranium revealed an intraosseous leptomeningeal cyst (Figure 1).

Post-traumatic intradiploic leptomeningeal cysts are extremely rare complications of calvarial fractures that occur during childhood⁽¹⁾. The first case was reported by Weinand et al. in 1989⁽²⁾. They are also known by other names, including intraosseous leptomeningeal cysts⁽³⁾ and post-traumatic intradiploic pseudomeningoceles⁽⁴⁾. These cysts are characterized by fracture of the inner table of the skull and laceration of the

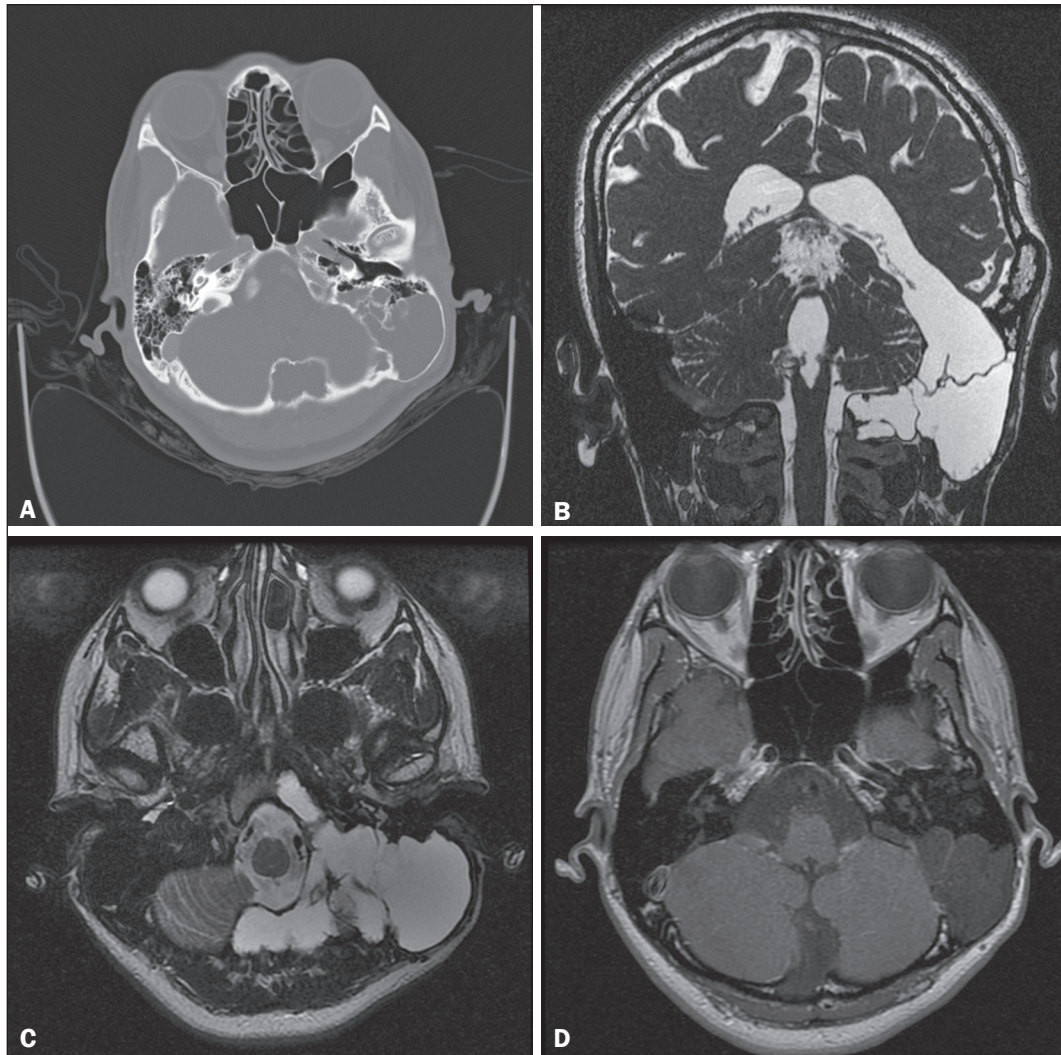


Figure 1. **A:** Axial CT, with bone window settings, showing cystic and expansile remodeling of the most posterior portions of the mastoid of the left temporal bone, with narrowing of the outer table of the skull, without rupture. **B:** Coronal MRI fast imaging employing steady-state acquisition sequence, showing leptomeningeal cystic communication extending from the left lateral ventricle, through the middle cranial fossa, toward the left temporal bone. **C:** T2-weighted turbo spin-echo MRI sequence, showing a leptomeningeal cyst, with bulging and expansion of the left temporal bone, as well as slight insinuation into the clivus. **D:** Contrast-enhanced T1-weighted MRI sequence showing a leptomeningeal cyst, with no anomalous enhancement or associated solid expansile lesions.

dura mater, with accumulation of cerebrospinal fluid in a pouch lined with arachnoid membrane and located within the diploic space. The most common site is the occipital region, although such cysts have also been reported to occur in other regions of the skull⁽⁵⁾. The clinical presentation is highly variable, ranging from asymptomatic to calvarial defects to overlapping neurological complaints.

The most widely accepted hypothesis regarding the pathophysiology of post-traumatic intradiploic leptomeningeal cysts is herniation of the leptomeninges to the diploic space through post-traumatic gaps in the dura mater and the inner table of the skull. After a traumatic incident, it can take weeks, months, or years for an intradiploic leptomeningeal cyst to develop⁽⁶⁾. Pressure effects and valve effects due to the growth of the brain during childhood, together with continuous cerebrospinal fluid pulses, act as expansive forces that promote the formation and growth of the intradiploic cyst over the years, resulting in wear and remodeling of the outer table of the skull^(7,8).

The radiological tools for the diagnosis of the leptomeningeal cyst are those that are also useful for the evaluation of cranial defects and associated brain lesions. An X-ray of the skull

shows expansion of the diploic space and preservation of the outer table. A CT scan allows the evaluation of the extent of the bone defect and of the outer table of the skull, thus facilitating the surgical planning. However, MRI is the imaging modality of choice and is a valuable tool for identifying other lesions, such as dermoid and epidermoid cysts⁽⁴⁾.

The differential diagnoses include bone lesions such as myeloma, metastasis, and eosinophilic granuloma, as well as intradiploic arachnoid cyst, which is usually congenital and manifests as headache, edema, convulsions, or neurological deficit. Although it is difficult to distinguish between intradiploic arachnoid cyst and post-traumatic intradiploic leptomeningeal cyst via imaging methods, a history of trauma and the cyst being located in the occipital region favors a diagnosis of the latter.

Surgical intervention is the basis of the treatment for leptomeningeal cyst, and the indications for surgery include severe craniofacial deformity and persistent headache^(4,7). The surgical procedure involves duraplasty followed by cranioplasty with a calvarial bone graft.

In conclusion, we can infer that post-traumatic intradiploic leptomeningeal cyst is a rare condition, with variable neurological

symptoms, occurring secondary to calvarial trauma occurring during childhood. Knowledge and early diagnosis of such cysts are important, because surgical intervention, when appropriate, can avoid neurological sequelae.

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<http://dx.doi.org/10.1590/0100-3984.2016.0166>

Prenatal diagnosis of congenital left ventricular diverticulum

Dear Editor,

Fetal cardiac anomalies involving the atrial septum, ventricular outflow tract, chambers, and valves are often found in routine examinations. However, prenatal detection of left ventricular diverticulum (LVD) is rare^(1,2). A 28-year-old primiparous pregnant woman underwent a routine ultrasound in the 22nd week. The fetal heart was found to be topic, with normal axis and volume. In the four-chamber view, we observed a structural cardiac abnormality characterized by the presence of an anechoic sac-like formation in the free wall of the left ventricle, near the apex of the heart, rounded and in the form of an exophytic cavity with thin walls, measuring approximately 1.7 cm × 2.0 cm (Figure 1). The two-dimensional examination revealed slight contractility of its walls, and a rhythm consistent with predominance ventricular rate, which would suggest a diagnosis of LVD. Power Doppler ultrasound showed filling of the entire cavity during ventricular systole and emptying during diastole (Figure 2). Spectral Doppler ultrasound showed triphasic flow and high pulsatility within the LVD (Figure 3); the cardiac morphology was otherwise normal. The remaining fetal anatomy was also normal. During prenatal care, the fetal heart showed no significant changes in its dimensions or its other aspects, and

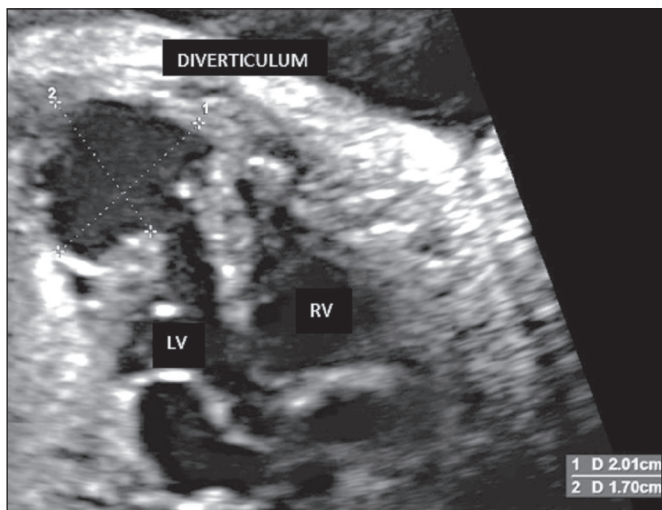


Figure 1. Four-chamber ultrasound view of the fetal heart, showing a diverticulum in the free wall of the left ventricle, measuring approximately 1.7 cm × 2.0 cm. LV, left ventricle; RV, right ventricle.

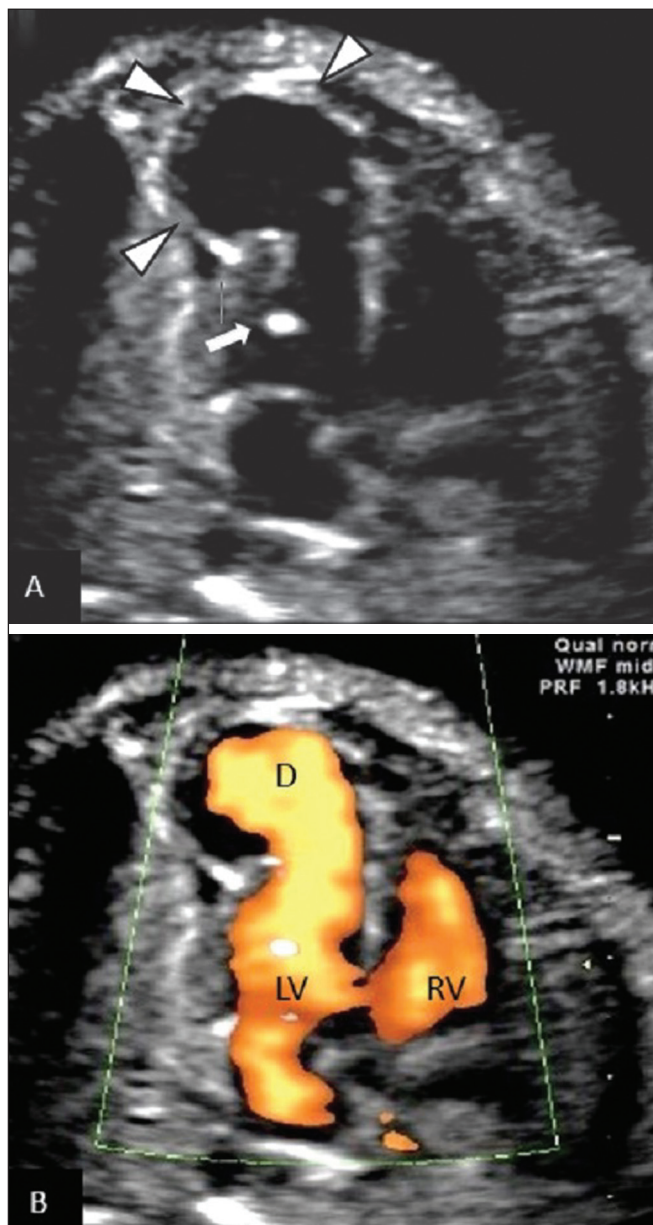


Figure 2. Four-chamber ultrasound view of fetal heart. **A:** Diverticulum near the apex of the left ventricle (arrowheads) and “golf ball” in the left ventricle (arrow). **B:** Power Doppler ultrasound showing the blood flow within the diverticulum during the cardiac cycle. LV, left ventricle; RV, right ventricle; D, diverticulum.