Quadrigeminal cisterna lipoma. Report of two cases and literature review
Lipoma da cisterna quadrigeminal. Relato de dois casos e revisão da literatura

Carlos Umberto Pereira1, Alberto Silva Barreto2, Eckstânio Marcos de Melo Rocha3, Allan Valadão de Oliveira Britto4, Nicollas Nunes Rabelo5
1 Major Professor of FBHC Neurosurgery Service and Neurosurgeon member of HUSE Service. Aracaju, Sergipe.
2 Neurosurgeon member of Primavera e São Lucas Hospital. Aracaju, Sergipe.
3 Neurosurgeon member of HUSE and FBHC Neurosurgery Service. Aracaju, Sergipe.
4 Radiologist member of HUSE Radiology Service. Aracaju, Sergipe.
5 Resident Physician of the Neurosurgery Service of the Santa Casa de Misericordia de Ribeirão Preto Hospital, São Paulo.

Abstract
Intracranial lipomas are congenital, benign and slow-growing tumors. The incidence were 0.1 to 0.5% of all primary brain tumors and are often diagnosed in incidental findings of neuroradiological investigation. Lipoma in quadrigeminal region occurs in 25% of intracranial lipomas and has been reported as lipomas in quadrigeminal cistern (perimesencephalic cistern), quadrigeminal plate, ambiens cistern or superior medullary velum. MRI is the most major exam. The treatment is conservative in most cases, surgical removal is hampered by their deep location and contiguous with adjacent neurovascular structures. The authors report two cases of lipoma in the quadrigeminal region, incidental findings and discuss the clinical findings, neuroimaging and treatment.

Key words: Intracranial lipoma, magnetic resonance, quadrigeminal cistern lipoma, treatment.

Resumo
Lipomas intracranianos são tumores congênito, benigno e de crescimento lento. Sua incidência é de 0.1 a 0.5% de todos os tumores cerebrais primários e são frequentemente diagnosticados em achados incidental de investigação neuroradiológica. Lipoma na região quadrigeminal ocorre em 25% dos lipomas intracranianos e tem sido relatados como lipomas na cisterna quadrigeminal (cisterna perimesencefálica), placa quadrigeminal, cisterna ambiens ou véu medular superior. O exame de eleição é ressonância magnética. O tratamento é conservador na maioria dos casos, a remoção cirúrgica é dificultada pela sua localização profunda e da contiguidade com estruturas neurovasculares adjacentes. Os autores relatam dois casos de lipoma na região quadrigeminal achados incidentalmente e discutem os achados clínicos, imagem e tratamento.

Palavras-chave: Lipoma intracraniano, ressonância magnética, lipoma cistern quadrigeminal, tratamento.

Introduction
Intracranial Lipoma(ICL) is rare disease and results from abnormal meningeal primitival persistence1. The ICL quadrigeminal cistern is located in over 20% of all LIC2,3,4,5,6,7. In most cases are asymptomatic and neuroimaging examination incidental finding8,9. Magnetic resonance imaging (MRI) has been helpful in the diagnosis. The conservative treatment has been indicated
In cases of incidental findings and asymptomatic.

**Histopatology**

From the macroscopic point of view, it presents soft consistency, mobile, painless. It consists of mature adipose tissue, with varied amount of collagen in contact points with nerve tissue and varying degrees of vascularization. The growth pattern of lipomas is usually closer to the hamartomas that to the other neoplasias. May be part of teratomas, present component osteocar-tilaginosm, or Schwann cell proliferation nests. Calcification can occur, in which case they are called osteolipomas. These usually develop in supraselar / interpeduncular region, it is characterized by a central arrangement fat and peripheral bone. Intracranial lipomas are rare tumors and adipose match between 0.06% and 0.46% of all intracranial tumors. They cause rare symptoms, therefore they are hardly detected. In general, lipomas are associated with other congenital anomalies, including agenesis of the corpus callosum, or represent incidental findings related to other non-related clinical manifestations.

**Anatomic considerations**

The cistern quadrigeminal is defined by Rothon, find it out in literature some conflict setting. Maiuti et al., considered lipomas located in the cistern quadrigeminal, cerebellum-mesencefalic and amnbiens as lipoma amnbiens cistern. Combining the above with lipomas magna cistern, Baeesa et al, classify them with lipoma of the dorsal region of the brainstem. The authors present two cases of ICL located in quadrigeminal cistern. They are discussed clinical picture, imaging findings and conduct.

**Case reports**

**Case 1**
MLSS, female, 39 years old, home general service. Traffic accident victim. The patient was admitted in emergency room with headache and sleepy. Neurological examination: no focal neurological deficit. Coma Scale Glasgow (CSG) on admission was 14. CT scan without contrast: presence of hypodense lesion in the quadrigeminal cistern region (Figure 1A). MRI of the skull: hypodense lesion in T1 and T2, located in quadrigeminal cistern region, absence of hydrocephalus and compression of adjacent structures (Figures 1B, 1C, 1D and 1E). Received hospital discharge. The patient were being oriented outpatient treatment of intracranial lipoma.

**Case 2**
AMJ, female, 46 years old, home general service. History holocranial headache in several years. Mild headache that it gives up of using just simple analgesics. Neurological examination: normal. MRI of the skull: presence of lesions with hyperintense on T1 and T2, located in quadrigeminal cistern region without mass effect (Figures 2A, 2B, 2C, 2D, 2E). Oriented periodic outpatient evaluation.
Discussion

ICL is a benign congenital malformation with slow growth behavior. It is between 0.1% to 0.5% of intracranial tumors\(^7,10,11\). According to Maiuri et al\(^4\) 20%, ICL are located in the quadrigeminal cistern and develop symptoms. ICL may occur if the quadrigeminal cistern, despite the small size cause symptoms\(^12\). However, it may produce symptoms due to compression exerted on the surrounding structures\(^2,3,4,13\). The clinical manifestations of ICL are: seizures (30%), headache (25%), mental disorders (15%) and asymptomatic in one third of cases\(^1\). The most common symptom is headache in adults when becomes symptomatic\(^9\), a fact that occurred in our cases. The ICL located in the quadrigeminal cistern are mostly asymptomatic, but may have ataxic gait, obstructive hydrocephalus, look paralysis or involvement of the trochlear nerve and seizures\(^6,11,12,14\). Our patients had headache and absence of obstructive hydrocephalus.

CT scan shows low attenuation lesions, seen only in adipose tissue ranging from -40 to -100 Hounsfield unit\(^10,15\).

The MRI is the method of choice for the diagnosis\(^16,17\). It is presented as hyperintense lesions on T1 and iso-hypointense T2 contrast misses, but in cases where the vascular lipoma component is important contrast enhancement occurs\(^17,18\).

Surgical treatment has risks of complications due to the close relationship with blood vessels and cranial nerves and as well as the adhesion and infiltration of adipocytes\(^10,18\). Thakkar et al\(^20\) only recommended surgical access of ICL, when they grows large enough to cause mass effect or intracranial hypertension. Lipoma when it is very adherent to major vessels, despite microsurgical technique its preservation is difficult\(^5,21\). Satyam et al\(^22\) this region resection has high morbidity and little benefit. Due to its low proliferative activity and a favorable biological course, does not require surgical treatment in cases of radiological findings and asymptomatic, a fact that we indicated in our patients the conservative treatment.

Conclusion

Intracranial lipoma is a rare malformation and benign, resulting from developmental disorders, and is often found associated with dysraphisms. It is usually asymptomatic or an incidental finding of imaging. With advances in imaging methods, an increase in the probability of detection of these lesions during life, even in asymptomatic patients. On the other hand, the diagnosis must lead to a search for other brain abnormalities, especially in the midline. Treatment is conservative in asymptomatic cases or incidental finding.

Recibido: 20 de abril de 2016
Aceptado: 20 de mayo de 2016

References