Orbital Hydatid Cyst:

assessment of age, gender, site distribution and clinical presentation

Quiste hidatídico orbitario: evaluación de la edad, el sexo, la distribución del sitio y la presentación clínica

Dr. Hayder Alhemiary, College of medicine, University of Baghdad, Iraq, Email: halhemiary@yahoo.com
Dr. Dhuha Almayoof, M,B,Ch,B, CABS ,Specialized Radiology, Medical city , Alshahid Ghzi, Department of Radiology, Iraq, dhuha1977@icloud.com.
Received/Recibido: 06/28/2021 Accepted/Aceptado: 08/15/2021 Published/Publicado: 11/30/2021 DOI: http://doi.org/10.5281/zenodo.5789983

Abstract

Background: Any luminal closed space that is lined by either membranous or cellular sheathe and containing air, fluid, solid or semisolid material is called Cyst. In the Orbit this cyst can be resulted from either ductal obstruction, developmental, or parasitic infestation, Objective: Assessment of the distribution of Orbital Hydatid cyst according to age, gender, site, clinical features. Method: A retrospective study conducted for the period from 2010-2020, during which 632 patients with orbital cyst attend the Orbital clinic in Medical city in Baghdad. This clinic receives most of orbital cases from all governorate of Iraq. Results: Ten patients out of 632 cases had Orbital Hydatid cyst (1.58%). The age was ranging from 3-15 years with a mean of (8.6±4.1 years). Three cases were female, with a male to female ratio 2:1. Orbital Hydatid cyst affecting the right side in 6 patients, while the left orbit was involved in 4 patients. No bilateral Orbital Hydatid cyst. With respect to the site of the lesion inside the orbit, 3 of them were superiomedial, while seven were superiolateral, no inferior lesion found in this study. The most common presenting features was painless proptosis (90%), followed by chemosis (60%), and conjunctival edema 30%. Conclusion: Hydatid disease of the Orbit usually it is the primary lesion, which is rare disease. Most of the cases are unilateral, located superiorly (medial or lateral) retro bulbar in location whether extra or intraconal. No sex dominance found although commonly affect children and teens. The most common clinical presentation is painless proptosis. When suspected, patients better to be evaluated by either computed tomography or by magnetic resonance imaging.

Keywords: Orbital Hydatid Cyst, age, gender, site distribution, clinical presentation.

Resumen

Antecedentes: cualquier espacio luminal cerrado que esté revestido por una vaina membranosa o celular y que contenga aire, líquido, material sólido o semisólido se denomina quiste. En la órbita, este quiste puede ser el resultado de una obstrucción ductal, del desarrollo o de una infestación parasitaria. Objetivo: Evaluación de la distribución del quiste hidatídico orbitario según la edad, el sexo, el sitio y las características clínicas. Método: Estudio retrospectivo realizado para el período 2010-2020, durante el cual 632 pacientes con quiste orbitario asisten a la clínica Orbital en Medical City en Bagdad. Esta clínica recibe la mayoría de los casos orbitales de todas las provincias de Irak. Resultados: Diez pacientes de los 632 casos tenían Orbital Hydatid cyst (1,58%). La edad osciló entre 3 y 15 años con una media de (8,6±4,1 años). Tres casos fueron mujeres, con una proporción de hombres a mujeres de 2:1. La COH afectaba al lado derecho en 6 pacientes, mientras que la órbita izquierda estaba comprometida en 4 pacientes. Sin Orbital Hydatid cyst bilateral. Con respecto al sitio de la lesión dentro de la órbita, 3 de ellos fueron superiomediales, mientras que siete fueron superiolaterales, no encontrándose lesión inferior en este estudio. Las características de presentación más comunes fueron proptosis indolora (90%), seguida de quemosis (60%) y edema conjuntival 30%. Conclusión: la enfermedad hidatídica de la órbita suele ser la lesión primaria, que es una enfermedad rara. La mayoría de los casos son unilaterales, localizados en retrobulbería superior (medial o lateral) en localización extra or intraconal. No se ha encontrado ningún orgullo sexual, aunque suele afectar a niños y adolescentes. La presentación clínica más común es la proptosis indolora. En suspensión, es mejor evaluar a los pacientes mediante tomografía computarizada o mediante resonancia magnética.

Palabras clave: quiste hidatídico orbitario, edad, sexo, distribución del sitio, presentación clínica.

Introduction

Any luminal closed space that is lined by either membranous or cellular sheathe and containing air, fluid, solid or semisolid material is called Cyst. In the Orbit this cyst can be resulted from either ductal obstruction, developmental, or parasitic infestation[1]. Orbital Hydatid cyst (OHC) incidence about 1% of the whole lesion of the Orbit, thus it's a rare lesion[2,3]. Most of the hydatid disease in the Orbit occur in relation with other lesion elsewhere in the body and it is rarely to be found alone[3]. Of total orbital cystic lesion, Hydatid disease comprise about 26%, the causative organism is Echinococcosis parasite, and the most common organ affected in human body is the lung and liver (10-15)[3]. Hydatid of the Orbit should be consider in the Diagnosis of unilateral painless proptosis[2,4]. Most common location in the Orbit is angular whether superiomedial or superiolateral while unlikely to be inferior[2]. Main symptoms are gradual progressive proptosis with or without pain, ocular movement may be affected, chemosis can accompany, with restriction of orbital field. The main treatment is surgical excision while chemotherapy may be used as adjuvant in case of rupture cyst or for prevention of recurrence. As in any surgical procedure complications may happen which can be avoided by awareness of the orbital microanatomy and gentle excision technique[4]. Objective: Assessment of the distribution of Orbital Hydatid cyst according to age, gender, site, clinical features.

Methods

A retrospective study conducted for the period from 2010-2020, during which 632 patients with orbital cyst attend the Orbital clinic in Medical city in Baghdad. This clinic receives most of orbital cases from all governorate of Iraq. The inclusion criterion was cases of OHC regardless the age and sex. The exclusion criterion was any lesion proved by surgical exploration or histopathological examination to be a solid tumour rather than cystic one. Accordingly, ten patients proved to have OHC by histopathological examination included in the study. Analysis of registry data for those patients were done focusing mainly on age, sex, clinical features, site of the cyst, imaging studies and surgical outcome. Statistical analysis done by SPSS 22, frequency and percentage used for categorical data, mean and SD for continuous data.

Results

Ten patients out of 632 cases had OHC (1.58%). The age was ranging from 3-15 years with a mean of (8.6±4.1 years). Three cases were female, with a male to female ratio 2:1. OHC affecting the right side in 6 patients, while the left orbit was involved in 4 patients. No bilateral OHC. With respect to the site of the lesion inside the orbit, 3 of them were superiomedial, while seven were superiolateral, no inferior lesion found in this study. The most common presenting features was painless proptosis (90%), followed by chemosis (60%), and conjunctival edema 30%. Thirty percent of patients had visual impairment in the form of field restriction. Computed tomography was used to detect the orbital cyst in 3 patients, the rest was diagnosed by magnetic resonance imaging. All patients treated by surgical removal through an approach that allow wide exposure and meticulous dissection to avoid rupture of the cyst. Orbital Hydatid cysts in this study removed surgically intact using warm saline irrigation through the plane between the cyst and its covering.

Discussion

Orbital Hydatid is a rare cystic lesion that represent less than 1% of total body involvement by the disease[2]. Usually it follow benign course unless left untreated which may led to visual loss[5]. In our study, which is the first in our country to include such number of patients regarding the orbit, Orbital Hydatid is the primary lesion, represent 1.5% of total case presented with orbital cystic lesion, Morales et. al. study it represent 5% but with longer duration of cases collection[6]. In this study, Orbital Hydatid cyst found to be unilateral, no side predominance, which is matching with the result of other papers although Talib stated that the left side more common due to that the common carotid artery originate directly from the summit of the Arch of Aorta[7-10]. With respect to the location, this study found that orbital hydatid cyst was usually retro bulbar, extraconal, and mostly laterally situated, Header et. al. had the same result, Pelin et. al. stated that most of his cases were intraconal although they are retro bulbar[3,4,8]. Male female ration was almost 2:1 which seems to be not significant in comparison with other literature[8-10]. Regarding the ages in this study, usually it range from 3-15 (average 8.6±4.1 years), in other literatures age distribution was variable but it mostly affect children and teens recorded by pelin, while Bennazou stated that 70% were below 12 years[5,7]. The main clinical feature was painless proptosis 90%, chemosis 60%, conjunctival edema 30% and lastly 30% having visual impairment in the form of field restriction, most of the authors record painless exophthalmos as the main complain and in a variable frequency pain, edema, visual impairment, chemosis, and limitation of ocular motility[3-7,11]. Computed tomography was used to detect the orbital cyst in 3 patients, the rest was diagnosed by magnetic resonance imaging. Usually it is unilocular, homogenous cystic lesion that non-contrast enhancing. CT scan is superior to MRI in evaluation of bony erosion that may accompany while MRI is the best for visualization of the content of the cyst and its relation to the surrounding tissue although both show contrast enhancement of the periphery[7,9]. In spite of highly sophisticated imaging, still Hydatid cyst can be missed with other lesions like abscess, lymphangioma, mucocele, hematomas and other orbital cystic lesion[7]. All of our patients underwent surgical excision and the cyst removed intact depending on our technique of irrigation of warm saline between the cyst and its laminated membrane covering from the back until it expelled outside[3]. Utilizing proper evaluation in combination with approach selection and familiarity with the microanatomy of the orbit are the keys to avoid complication during surgical removal[3,4,6,7].

Study Limitations

This is a single center, surgeon operation case series, and the efficacy of this study can't be compared to other control group.

Also follow up of the outcome was time limited to nine month as most of the patients lost from the follow up. Long follow up with imaging modality allow better understanding of long-term recurrence and complications.

Conclusions

Hydatid disease of the Orbit usually it is the primary lesion, which is rare disease. Most of the cases are unilateral, located superiorly (medial or lateral) retrobulber in location whether extra or intraconal. No sex dominance found although commonly affect children and teens. The most common clinical presentation is painless proptosis. When we suspect Orbital Hydatid cyst, patients better to be evaluated by either computed tomography or by magnetic resonance imaging.

Acknowledgements

The authors would like to acknowledge and thank all the resident and health worker who assist us in this research.

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