

Case reports

Multiple cerebral hydatid cysts

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Abstract. A 39-year-old woman was admitted to hospital with headaches, vomiting, psychic impairment and diplopia. Three hydatid cysts of the lung had been previously removed. An avascular mass in the left hemisphere with left-to-right displacement of the anterior cerebral arteries was noted during a brain angioscintigraphy. A computed tomography (CT) brain scan showed two cystic lesions situated in the left-frontal and occipital regions. A CT abdominal scan showed multiple cysts in the liver, spleen and both kidneys. At operation, two brain cysts were totally extirpated without rupture. The definite pathological diagnosis was secondary hydatid cysts. The headaches, vomiting and diplopia were persistent in the post-operative period. Seven days after the operation, a CT brain scan showed an infratentorial cyst. The patient rejected any surgical intervention.

Case report

A 39-year-old woman was admitted to the Neurosurgery Department of the University Hospital in February 1983. She had been suffering from intermittent headaches for 3 years. During the 2 months before admission, the headaches had become even more severe and were associated with vomiting, psychic impairment and diplopia. The only neurological data on admission was a palsy of the fourth left cranial nerve. No papilledema was detected. Three hydatid cysts of the lung had previously been removed.

A chest radiogram did not show hydatid cysts. Plain skull film was normal. A ^{99m}Tc-DTPA (750 mBq) cerebral study was performed. An anterior 2-s dynamic view of the cerebral circulation taken with 70-mm film showed an avascular mass in the left hemisphere with left-to-right displacement of the anterior cerebral arteries (Fig. 1). The morphological study was normal. A computed tomography (CT) brain scan demonstrated two low-density, round, homogeneous areas with clearly defined borders and without perifocal oedema situated in the left-frontal and occipital regions (Fig. 2). The ventricular system was displaced to the opposite side. Following contrast infusion, there was no peripheral rim of enhancement. A CT abdominal scan showed multiple cysts in the liver, spleen and both kidneys.

On operation, two brain cysts were totally extirpated

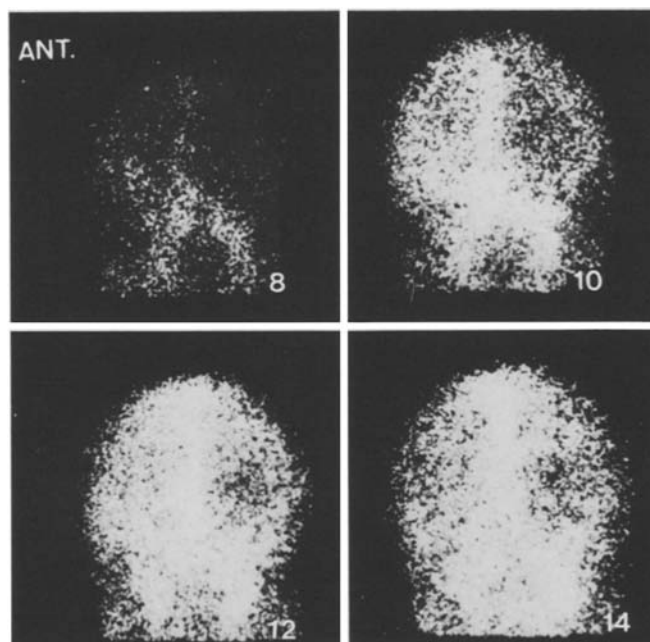


Fig. 1. ^{99m}Tc-DTPA dynamic cerebral study shows an avascular mass in the left hemisphere with left-to-right displacement of the anterior cerebral arteries

without rupture. The definite pathological diagnosis was secondary hydatid cysts.

The headaches, vomiting and diplopia were persistent in the post-operative period. Seven days after the operation, a CT brain scan was performed, which showed hypodensity of the frontal lesional region with discrete dilation in the left-frontal horn and an infratentorial cyst which was distorting the quadrigeminal cistern (Fig. 3). This lesion had not been seen in the pre-operative CT scan. The patient rejected any surgical intervention.

Discussion

Echinococcosis or hydatidosis is a parasitic disease caused by a cestodes of the genus *Echinococcus*. The hydatid disease is more frequently found in Mediterranean countries, South America and Australia [16]. On average, 1979 cases are diagnosed in Spain every year, the average rate being 5.65 per 100,000 inhabitants [6]. Hydatid cysts most commonly occur in the liver and lung. In a recent report on



Fig. 2. CT brain scan shows two low-density, round, homogeneous areas with clearly defined borders in the left-frontal and occipital regions, and without perifocal oedema and rim enhancement

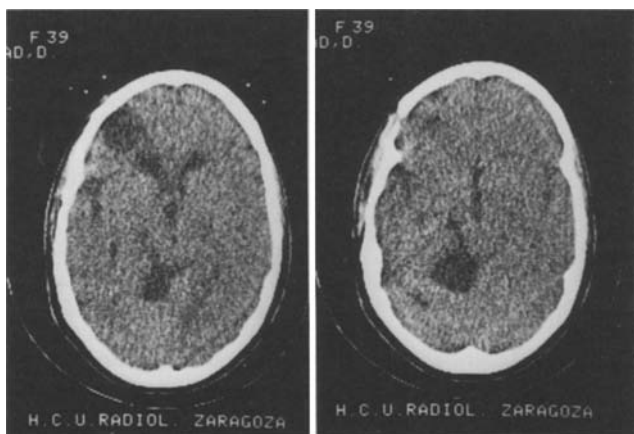


Fig. 3. Post-operative CT brain scans show hypodensity of the frontal lesional regions with discrete dilation in the left-frontal horn and an infratentorial cyst which is distorting the quadrigeminal cistern

6,561 hydatidosis cases in Spain, 52.3% of the cysts were found in the liver, 43.3% in the lung and 3.4% in other organs [14]. Hydatid cysts of the brain are unusual. The brain is involved in only 0.5%–4.8% of all cases of hydatid disease [8, 11, 17]. It is most commonly seen in children and young adults, and there is no significant difference in the rate of occurrence between the sexes [1, 3, 13, 17, 20, 21]. Cerebral hydatidosis accounts for between 0.05% and 2.9% of space-occupying processes of the brain [15, 20, 21]. Multiple hydatid cysts of the brain are rare [25] and, very frequently, secondary to the rupture of cysts of the lung, left heart, or the spontaneous or intra-operative rupture of a primary cerebral cyst [7]. Intracranial cysts are commonly located in the terminal branches of the middle cerebral artery. Intraventricular and infratentorial hydatidosis is unusual [1, 10, 17, 19, 20].

Clinically, these cysts exhibit signs of increased intracranial pressure, with focal symptoms which correspond to their location in the cerebral parenchyma. Plain skull films may show changes due to increased pressure, localized thinning and bulging of the overlying bone [1, 17, 20]. Classical angiographical findings include the extensive displacement of stretched arteries by a large, round, avascular mass [9]. However, the findings from plain film or angiography are all non-specific.

Radionuclide scanning is of limited value. In previous cases, areas of diminished activity or the visualization of the cystic outline on static brain scans have been described [17, 26]. Dynamic flow study may show a focal decreased flow to the site of the lesion [24] which can be associated with vascular displacement (Fig. 1). The value of the detection of displaced cerebral vessels by dynamic radionuclide angiography has previously been reported [12, 18, 22, 23].

CT brain-scan findings usually reveal a single large, hypodense, homogeneous, spherical or egg-shaped lesion which is rarely multiple and has clearly defined borders without perifocal oedema or rim enhancement [2, 3, 21, 25]. There is usually a significant shift of the ventricular system to the opposite side. The frequency of calcified cerebral hydatid cysts is very low [4, 5].

CT provides more specific findings which are extremely important for the planning of surgical intervention. CT is also an effective post-operative control method. By CT brain scan, these cysts can easily be differentiated from brain abscesses, arachnoidal cysts and cystic tumors.

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