

COMPUTED TOMOGRAPHY IN HYDATID  
CYST OF THE ORBIT

K. Abbassioun, A. Amir-Jamshidi., and M.K. Akhyari

**Summary:** Two cases of hydatid cysts of the orbit causing unilateral exophthalmos are reported. Diagnosis were suspected by means of computed tomography (CT) and confirmed at Operation. CT changes are described and its value in diagnosis of this lesion particularly in the endemic areas is stressed.

Hydatidosis is the commonest parasitic infestation of the orbit comprising less than 1% of the entire body affections<sup>4</sup>. In the endemic areas the diagnosis is based on the clinical presentation and prior to CT. neuroradiological procedures were of no significant assistance<sup>6</sup>.

Brief mention of CT changes of isolated cases of hydatid cysts of the orbit is made before<sup>2,3,5</sup>. We are reporting the CT changes of two other cases of hydatid cyst of orbit encountered among 80 operatively proven cases of unilateral exophthalmos evaluated by CT.

From: Department of Neurosurgery, Dr. Shariati Hospital, School of Medicine, Tehran University, North Kargar Ave., Tehran, Iran

### Case reports.

#### Case 1:

A 32 year old female presented with progressive painless left sided exophthalmos of one and a half years duration.

There was 12mm non-pulsating and irreducible protrusion of the eye which was displaced slightly downward and laterally. The edge of a rather firm mass could be palpated between the globe and the superior orbital rim. No bruit could be heard on auscultation. Optic disc was slightly pale with no change in her visual acuity or visual field. The rest of the physical examination was within normal limits.

Routine blood and urine tests were in normal limits. Skull X-Rays, optic foramen views and chest X-Ray were all reported as normal.

CT. Revealed an ovoid cystic mass with a well defined border occupying most of the retrobulbar space and situated above the optic nerve level. There was a fine hyperdense capsule which only enhanced slightly after contrast material injection (from 27 to 38 Hounsfield unit) (Fig.1) The cysts content had an absorption value much less than normal brain tissue and only slightly more than that of C.S.F.

At operation, a hydatid cyst was found with a rather tough fibrotic pericyst. The endocyst was drained and removed. The pericyst cavity and exposed area of the retro-orbital space were treated with diluted solution of silver nitrate and thoroughly irrigated with hypertonic



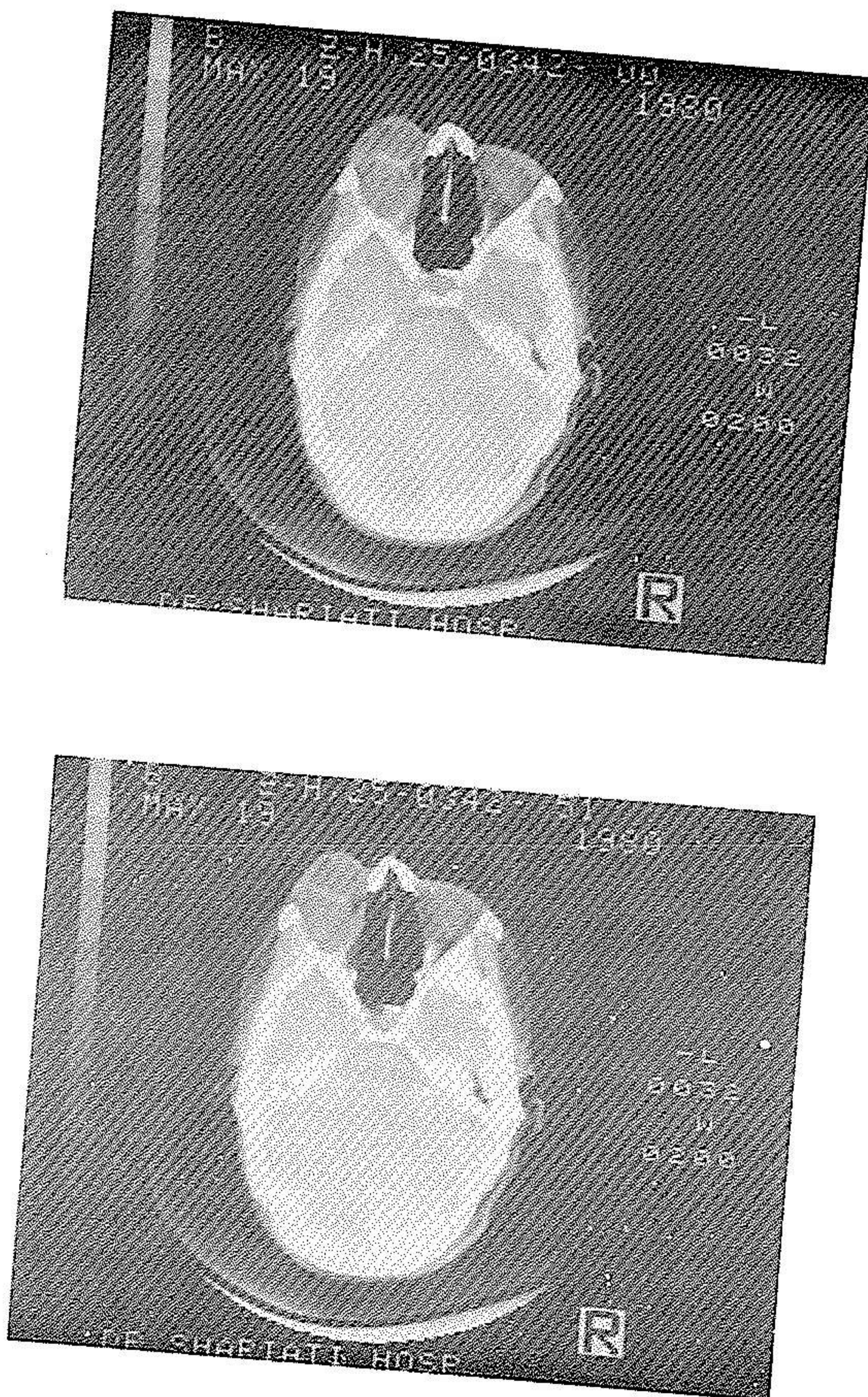


Fig. 1 : Precontrast (a) and post contrast (b) CT Scan of the orbit showing a left retrobulbar cystic lesion, case 1. The rim enhanced slightly, from 27 to 38 Hounsfield unit.



saline solution.

Pathological studies confirmed hydatid endocyst with no scolex.

Patient made uneventful post operative recovery and only had some limitation of lateral motion of the left eye at the time of discharge which cleared up in 3 months time.

#### Case 2:

A 25 year old female presented with progressive painless right sided exophthalmos of one year duration. Her eye was congested and displaced forward and downward about 8mm. There was some limitation of lateral and upward gazes. On palpation the eye was irreducible but minimally painful. There was no papilledema or optic atrophy however, the vision had diminished to the level of finger counting.

Skull X-Rays were reported as normal. CT. revealed an ovoid retrobulbar mass with a density similar to that of the globe and a very fine rim which enhanced minimally following contrast material injection (Fig.2).

At operation, a hydatid cyst with a well defined pericyst capsule was noted which was ruptured during extripation. The endocyst was removed and the cavity was irrigated with hypertonic saline solution. Post operatively there was complete resolution of exophthalmos and rapid recovery of her vision.



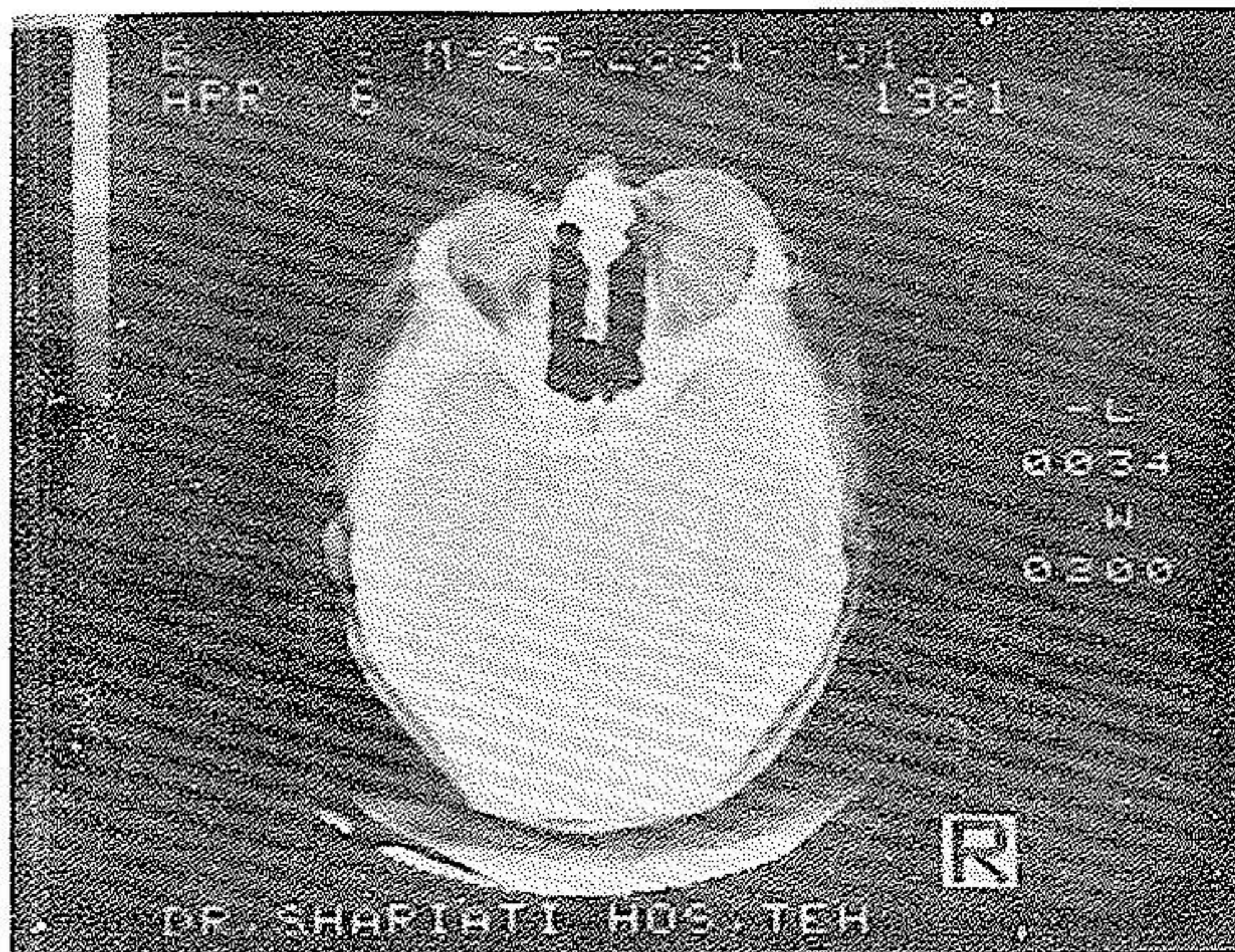


Fig. 2 : Precontrast CT of the orbit showing right retrobulbar Cyst, case 2.

Discussion : Once the parasite is lodged in the retrobulbar space begins to grow and form a single cyst. Multivesicular hydatid cyst are rather rare in the orbit<sup>6</sup>. The cyst expands slowly compressing surrounding normal structures. Depending upon the intensity of the parasite and host tissue reaction a fibrous capsule (pericyst) of variable thickness forms about the cyst.

The fluid content of the cyst has an absorption value similar or close to that of water or C.S.F. It is the thickness of the pericyst capsule which accounts for the presence as well as the intensity of the hyperdense rim. In cases where parasite and host tissue reaction is minimal the hyperdense rim may be absent as seen in the case reported by Ozyon, et al.<sup>5</sup> with the CT of eyes similar to



what is reported in the hydatid cysts of the brain. In other cases with intense parasit and host tissue reaction the pericyst is rather thick and leads to a hyperdense rim similar to what is seen in the present cases (Fig. 1-2) and those reported by Danziger and Price<sup>2</sup> and Gonzalez Toledo and Szlagowski<sup>3</sup>.

Cyst located deep in the crowded retrobulbar space and large enough to cause exophthalmos are practically impossible to be removed unruptured, that is without damaging the ocular muscles and nerves. Needle aspiration of the cyst content in a way to avoid significant spillage and contamination of the periorbital tissue, complete excision of the endocyst and treating the pericyst cavity and other contaminated areas with diluted solution of formalin or silver nitrate diminishes the chance of recurrence of the cyst. Achieving this result requires an accurate preoperative diagnosis. We feel that the CT changes are characteristic enough that at least in the endemic areas one should suspect the diagnosis. Suspecting the diagnosis preoperatively one may use a small lateral approach to the orbit and avoid transcranial operation with its risk of intracranial contamination<sup>4</sup>.

Differential diagnosis include epidermoid cyst and mucoceles both of which are associated with significant destruction of the bony orbit.

### References

- 1\* Abbassioun, K., Kanmat, H. Ameli N.O., and Tafazoli M. (1978). Computerized tomography in hydatid cyst of the brain. *Journal of Neurosurgery*, 49: 408-411.

- 2\* Danziger, A. and Price, H. (1980).CT. Findings in orbital Echinococciasis. Journal of computer assisted tomography. 4(1): 128-129.
- 3\* Gonzalez Toledo, E.C. and Szelagowski, J.C. (1980). Unilateral exophthalmos in orbital Echinococciasis. Journal of computer assisted tomography. 4(1): 127.
- 4\* Henderson, J.W, (1973) Orbital tumors. PP. 113-116 Philadelphia, W.B. Saunders.
- 5\* Ozgen.T., Erbenji A., Bertan V., Saglam S., Gurcay O. and Pirnar T.(1979).  
The use of computerized tomography in the diagnosis of cerebral Hydatid cysts.  
Journal of Neurosurgery, 50:339-342.
- 6\* Saidi, F. (1976) Surgery of Hydatid disease. PP. 373-376. London W.B. Saunders.