

GIANT CELL TUMOR OF THE VERTEBRA SIMULATING VERTEBRA
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ABSTRACT

A case of giant cell tumor of the vertebra simulating vertebra plana was reported. the diagnosis of the vertebra plana should not be confirmed by the history of the patient and radiological manifestation alone. it can only be confirmed by biopsy.

Bone lesions of the spine is one of the most difficult problems to diagnosis and treat. Spinal tumors are either primary or metastatic. Most bone tumors of the spine in the first two decade of life are primary and benign; where as a majority of the bone lesions in old people are metastatic and malignant.⁵⁻¹¹ The malignant lesions of the spine can without very great risk be excluded from diagnostic consideration in children and adolescence (Sherrard.1969)¹². From 34 cases of bone lesions of the spine and the pelvis in the first two decade of life, reported by Thommeson and Paulsen(1967)¹³ nine were histiocytosis X, two anevrysmal bone cyst, nine Ewing sarcoma, two reticulum cell sarcoma.

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None were giant cell tumor.

Giant cell tumor of the spine is rare; most of the reported cases were in the sacrum. Jaffe (1958)¹⁷ reported only two cases of giant cell tumor, one of which occurred in the sacrum. Of the 218 cases of the giant cell tumor reported by Goldenberg and Campbell (1970)⁶ there were 13 cases of giant cell tumor of the vertebra, one in the cervical region, one in the lumbar spine, and eleven in the sacrum. Of 108 giant cell tumors studied by Coley (1960)⁴, one was in the lumbar vertebra and one in the sacrum.

In a review of 413 tumors including the spine (Cohen et al 1964)³ there were sixteen cases of giant cell tumor, one in the cervical spine, one in the lumbar region and fourteen in the sacrum.

In this article we are going to report a case of giant cell tumor of the sixth thoracic vertebra, radiologically simulating vertebra plana.

CASE REPORT:

K.N.S, a 14 year old boy was admitted to Shafa rehabilitation hospital on April 1976 with paraplegia and incontinence of urine and feces.

Four months prior to his admission, he started to have back pain and paresthesia of the lower extremities. One month later he fell down a few steps, after the fall his paresthesia worsen, and he was not able to walk any more. with a diagnosis of Pott's paraplegia he was hospitalized in another hospital and was put on bed rest and anti tuberculosis drugs. He continued to have paresthesia and his weakness improved some what in the first two we-

eks. However it gradually worsen over a longer peiod of time. Four weeks prior to his admission he had no sensation in the lower limbs, and he was not able to move them at all. He had incontinance of urine and feces too. He was reffered to our hospital for treatment. His past and family history was not remarkable.

On physical examination the patient had spastic paraplegia with colonous and positive Babaski. No fixed deformity was noted. Patient did'nt have any sensation up to about two cm below the nipple line. There was mild tenderness on percussion of the mid dorsal area. Also there was mild kyphosis in this area.

The patient had an indowellling folley cather. The rest of the physical examination was normal.

Labaratory findings: C.B.C, 15000 with 61% neutrophil and 37% lymphocytes, sedimentation rate was 56 mm in the first hour. The P.P.D was positive, serum calcium, phosphorus, and alkaline phosphatase was normal.

Antero posterior & lateral roentgenogram, and tomography of the thoracic spine demonstrated almost complete collapse of the T-6 vertebral body, associated with localized kyphosis in that area. Adjiccent vertebral bobies were intact and no abnormality of the end plate was seen. The disc spaces were normal. There was no evidence of paravertebral abcesses.

Our impression on admission was tuberculosis of the spine causing paraplegia, how ever we could not rule out vertebra plana. Antituberculosis drugs were continued. Five days after admission he underwent surgery. Under general anesthesia, left thoracotomy was performed and the involved vertebra exposed, and with the adjacent intervertebral disc curreted out. There was no abcess or caseo-

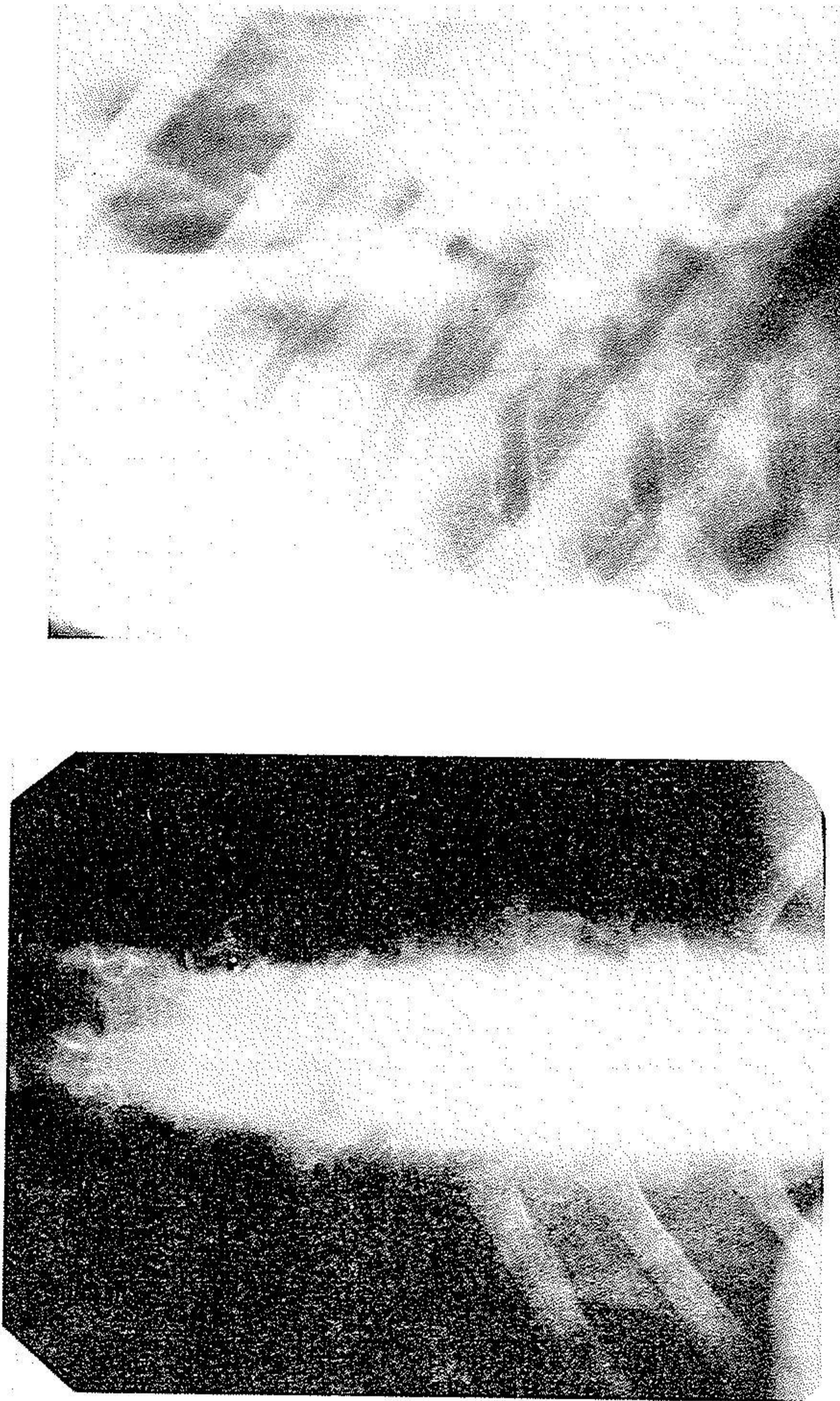


Fig 1-A & 1-B-Antero posterior and lateral view of the dorsal spine

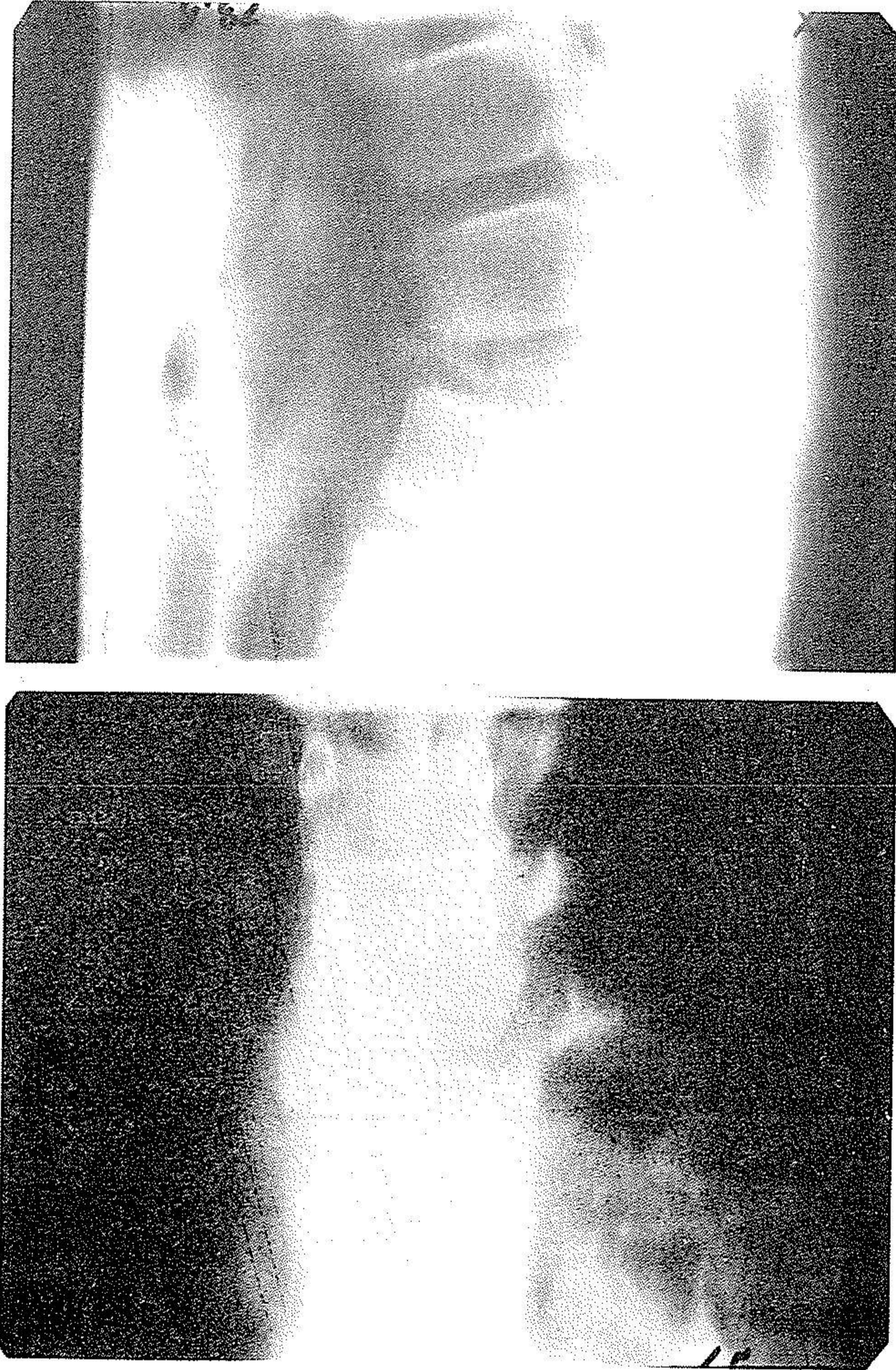


Fig 2-A & 2-B-Antero posterior and lateral tomogram of the dorsal spine

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us material at the site of involved vertebra. The remnant of the involved vertebra was small and unnoticeable. The adjacent disc was looking normal. After excision of the involved vertebra and adjacent discs, with a piece of the patient's rib, an anterior spine fusion was performed. Post operation the patient didn't have a remarkable neurological recovery.

A microscopic section of the bone fragments showed a neoplastic lesion in some fragments composed of a rather cellular stroma, moderately vascularized, associated with rather plump, spindle shaped cells regularly interspaced with a large number of multiple cleaved giant cells, with mild mitotic activity. There was some area contained foci of fresh hemorrhage.

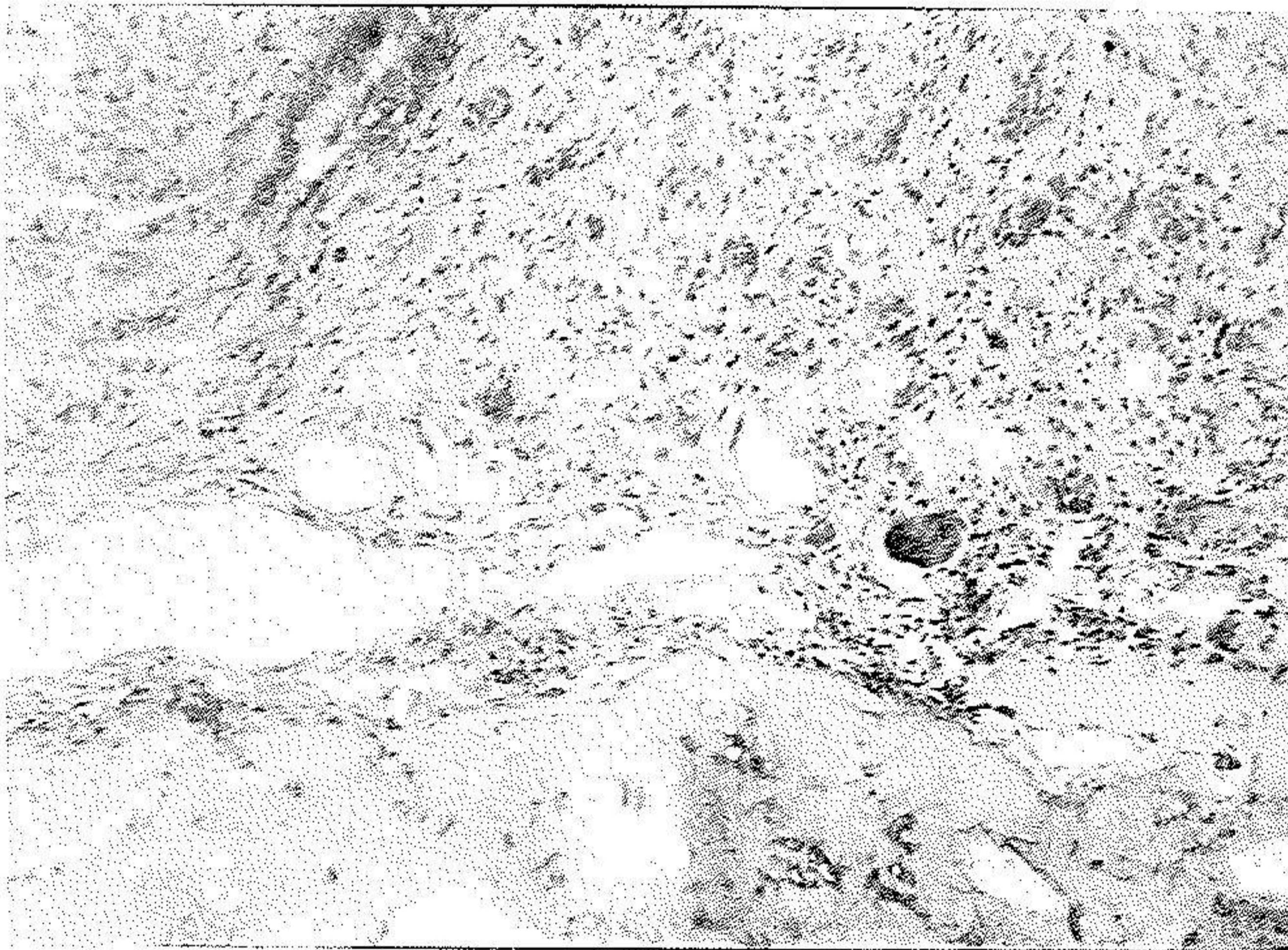
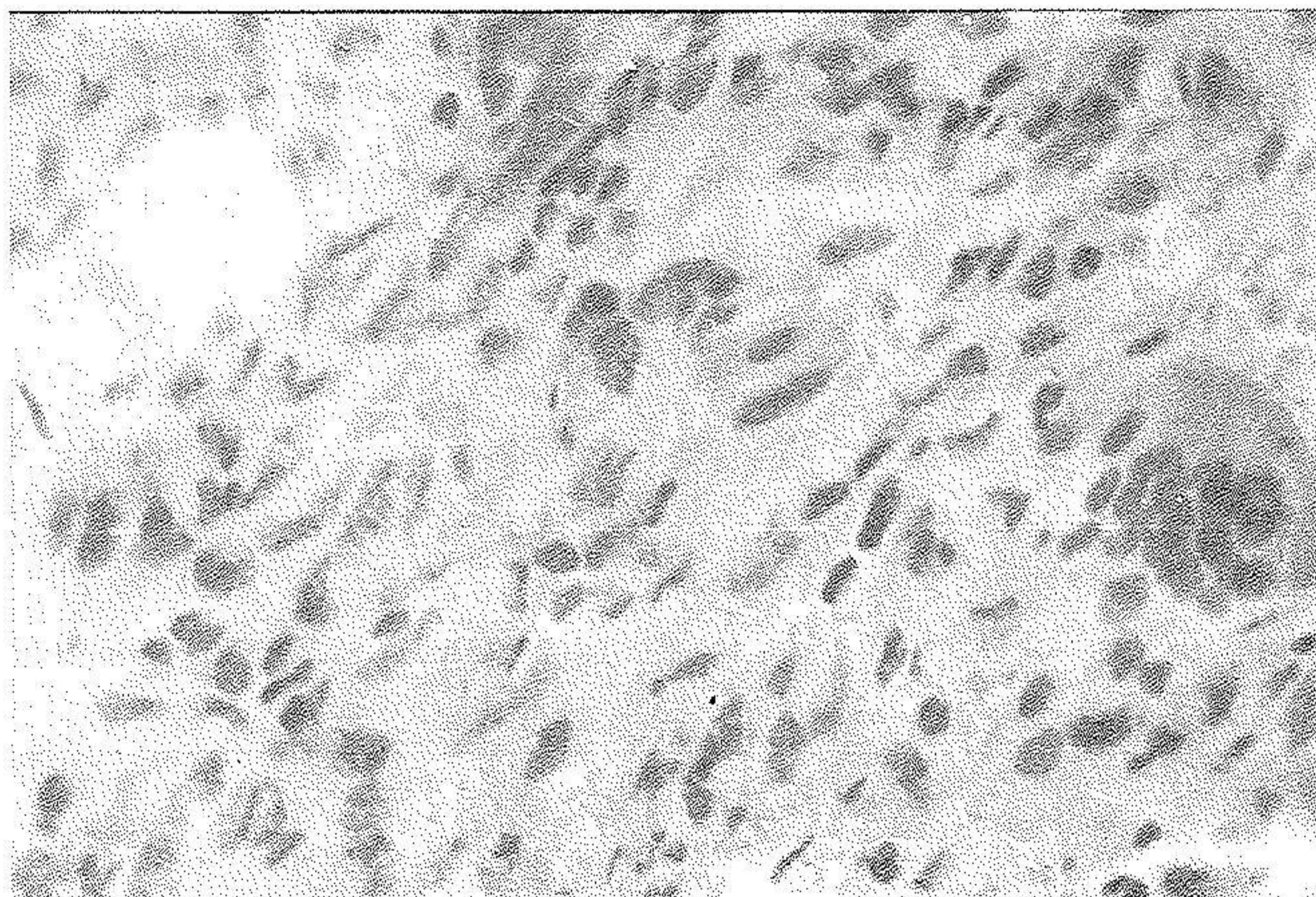


Fig 3-A & 3-B-low and high power microscopic section of the tumor.



DISCUSSION

The commonest cause for a solitary collapsed vertebral body in a child and even in a young adult is eosinophilic granuloma (Murry 1971).⁹ The radiological criteria which was laid down by Calve (1926)¹ and used later by Compere and associates (1954) for the diagnosis of the eosinophilic granuloma are:

- 1- Only one vertebra is involved
- 2- The adjacent discs above and below the involved vertebra are intact.
- 3- Disc spaces are actually 1/3 wider than the next space above and below.
- 4- The vertebra which has been flattened remains dense and resembles the edge view of a silver dollar.

Vertebra plana has a striking and distinctive radio-

graphic picture, and in most cases it does'nt need any biopsy. However occasionally, there are some other lesions radiologically simulating this entity and should be considered in differential diagnosis. Tuberculous spondylitis (interbody type without involvement of the disc spaces), and bone tumors like Ewing sarcoma some times may be more or less the same radiological manifestation and should be considered in differential diagnosis.

Considering tuberculosis of the spine is not rare in Iran; with an elevated sedimentation rate, and positive P.P.D we were suspicious of Pott's paraplegia in our patient. However, we had eosinophilic granuloma in mind too. Excisional biopsy showed that our preoperative diagnosis was not correct.

Considering a few reports of neoplastic disease of the vertebra simulating vertebra plana,¹⁰ the diagnosis of the vertebra plana should not always be confirmed by the history of the patient and radiological manifestations alone, it can only be confirmed by surgical biopsy.

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