

## HISTOPLASMOSIS OF THE ADRENAL GLANDS

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### ABSTRACT

A case of adrenal histoplasmosis was presented bilaterally in diabetic female patient. The disease caused an adrenal insufficiency. The involved adrenal glands had a bulgy oval shape configuration. The borders were well defined. Diffuse low echoic pattern of the mass was observed by ultrasonography. Non-enhanced CT scan of the masses revealed diffuse low density with a thick wall of hyperdensity. The inner and outer layers were both smooth. Some internal enhancement was noted after contrast medium was given. The diagnosis was made by a small-sized needle percutaneously under CT guidance.

### INTRODUCTION

Approximately one in every 1000 cases of acute pulmonary histoplasmosis (caused by the soil fungus *Histoplasma capsulatum*) will lead to dissemination (1,2). The people most susceptible to this occurrence are the very young, the aged, and those who have an immune deficiency. The fungus has an affinity for the mononuclear phagocytes (histiocytes) that compose the reticuloendothelial system. There is a high incidence of liver, spleen, lymph node, bone marrow, and adrenal gland involvement by this fungus in disseminated disease (1,3,4). *Mycobacterium tuberculosis* has been considered the most common infection that causes adrenal insufficiency. With the decline of tuberculosis, *H. capsulatum* may now be the most common infection leading to adrenal insufficiency.

Adrenal histoplasmosis was diagnosed in our case by plain film, ultrasonography, CT scan and narrow Gauge needle aspiration biopsy.

### CASE REPORT

A 53-year old female diabetic patient with chronic renal failure, developed hypotension,

generalized hyperpigmentation and weight loss 30 kg in 2 months. A work up for the cause of adrenal insufficiency was thus performed. Plain KUB showed both adrenal masses. The masses were low echoic by ultrasonography. CT scan of the adrenal masses revealed low density masses with isodensity rim and faint internal enhancement. A biopsy needle was inserted to obtain the pathologic tissue under CT guidance. Histoplasmosis was noted at histology. (Fig.1-4).

### DISCUSSION

The adrenal glands are the internal organs most commonly involved in disseminated histoplasmosis, and adrenal insufficiency is the most frequent cause of death when this disease is untreated (1,3,4). The reason for the frequent adrenal gland involvement is not known.

The most characteristic adrenal gland appearance in this disease by CT scan was bilateral symmetrical adrenal gland enlargement with low density areas of focal hemorrhage and necrosis. The glands tended to maintain their normal shape (1,5). Calcification of the adrenal glands was not observed in the acute phase of this disease and seems to be

associated more with the healing process. The differential diagnosis of bilateral adrenal enlargement must include other granulomatous infections such as disseminated tuberculosis (1,6,7), cryptococcosis and blastomycosis (9), lymphoma, bilateral adrenal metastases (6,11), bilateral hemorrhage (12), and rare bilateral primary adrenal tumors (13).

The principal cause of Addison's disease today is idiopathic atrophy: evidence suggests that an autoimmune mechanism may be involved (5,14-16). Less common causes of Addison's disease are tuberculosis, histoplasmosis, adrenal apoplexy (Waterhouse-Friderichsen syndrome), and metastatic carcinoma involving both adrenal glands.

The diagnosis of the adrenal histoplasmosis could be made by percutaneous needle aspiration biopsy, localized by CT scan, as is used in this case. The use of narrow gauge needles is relatively safe and high diagnostic yield could be obtained with modern cytologic preparation (17).

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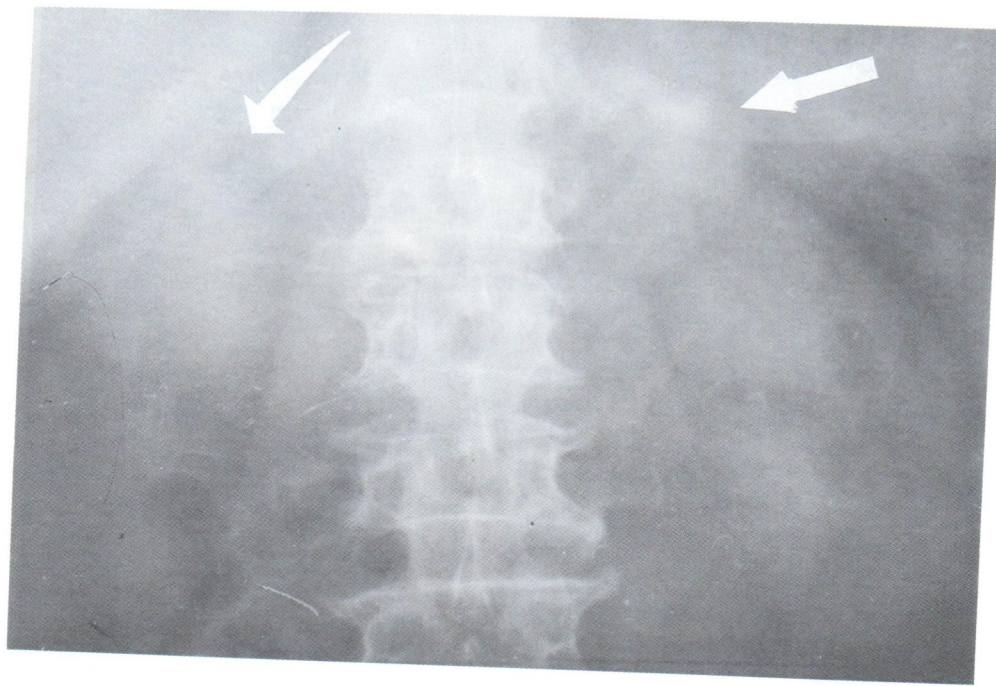


Fig.1 Plain KUB showed a well defined border bulgy oval shape mass at both suprarenal areas. The outlines of the kidneys were not obscured.

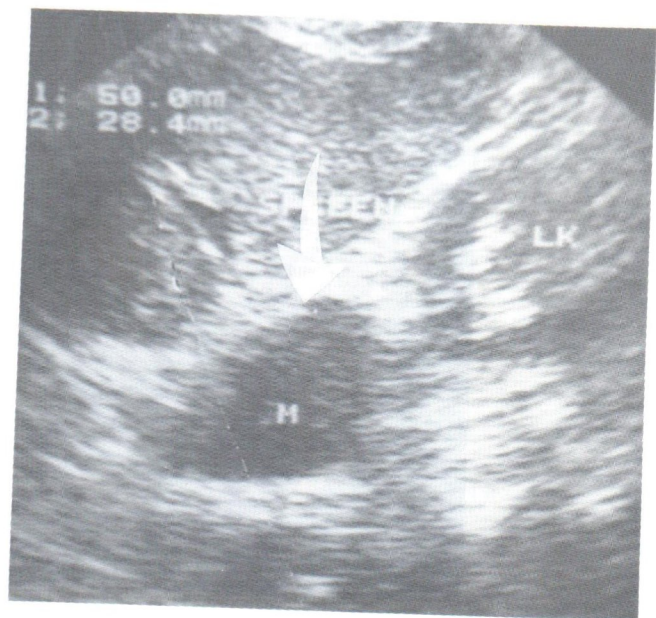
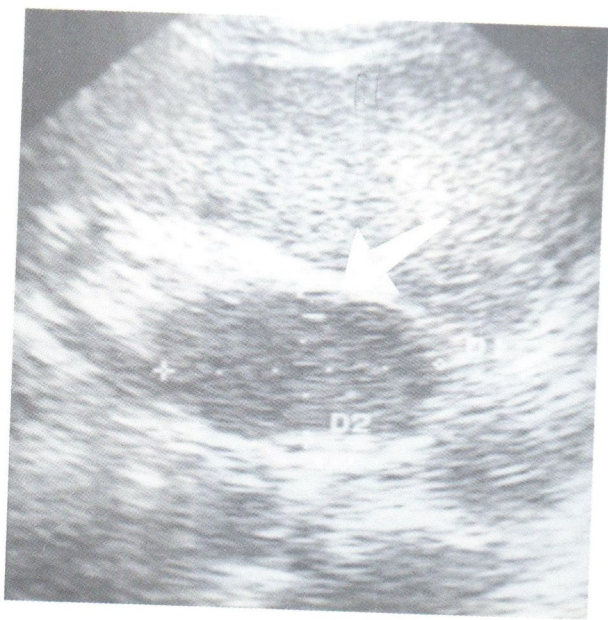


Fig. 2 Ultrasonography of the upper abdomen revealed an oval shape homogeneously low echoic mass, size 5.6 x 2.3 cm replacing right adrenal gland and 5 x 2.8 cm, replacing left adrenal gland. The masses had a well defined border.

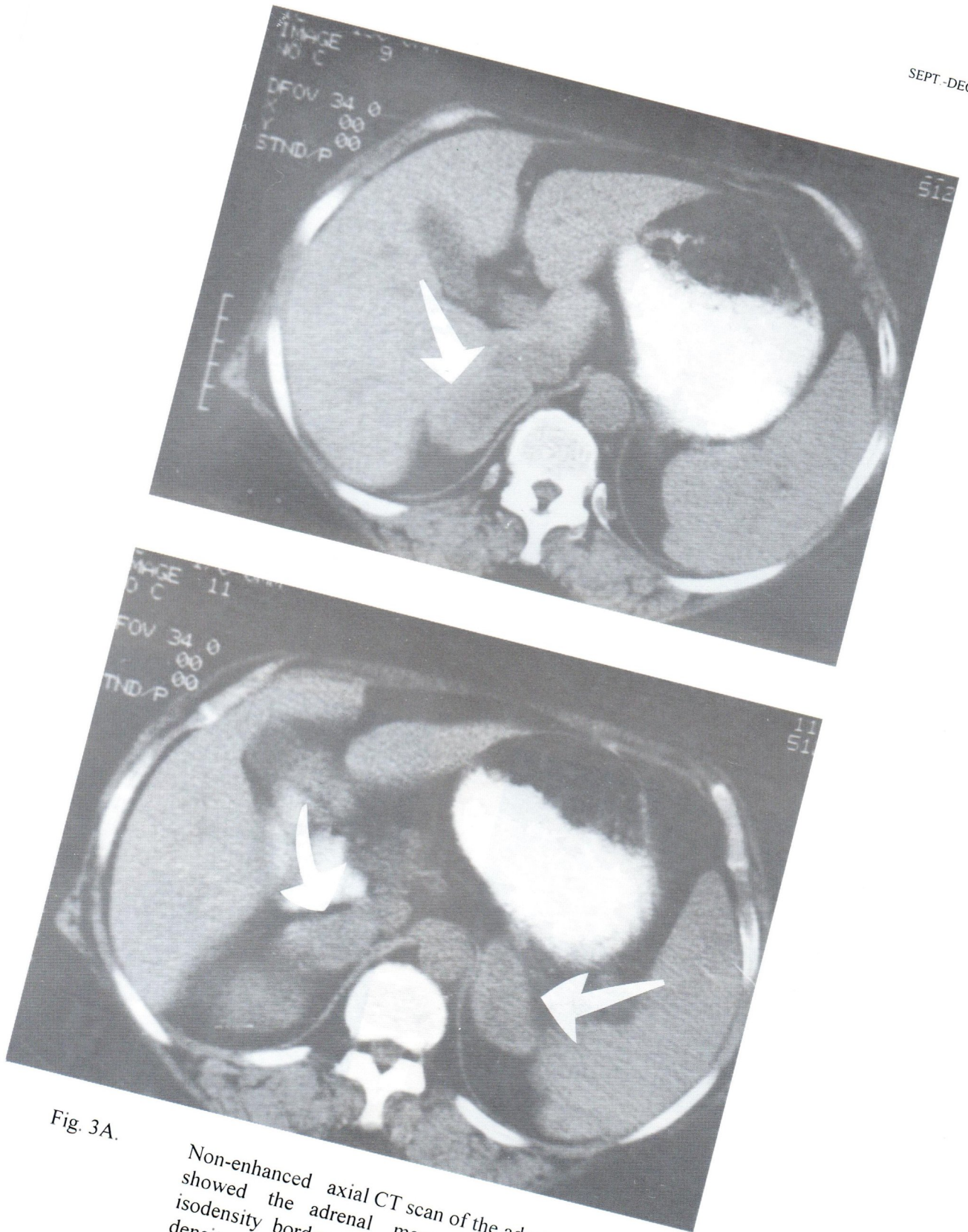


Fig. 3A.

Non-enhanced axial CT scan of the adrenal glands showed the adrenal masses to have smooth isodensity border (isodensity to the liver) and low density center (similarly low density as the adjacent inferior vena cava).

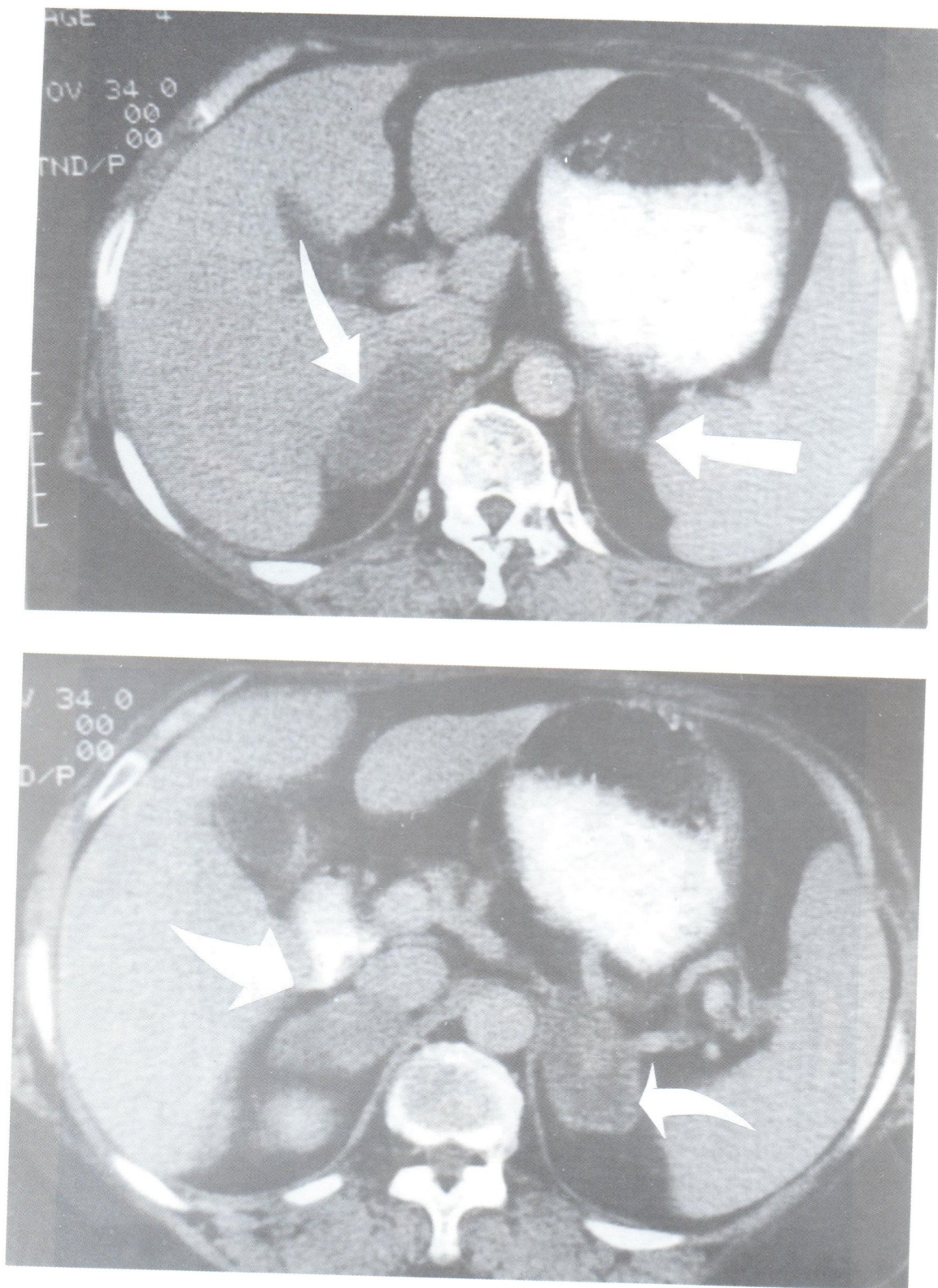


Fig. 3B. I.V. enhancement axial CT scan of the masses showed some faint internal enhancement of the masses.

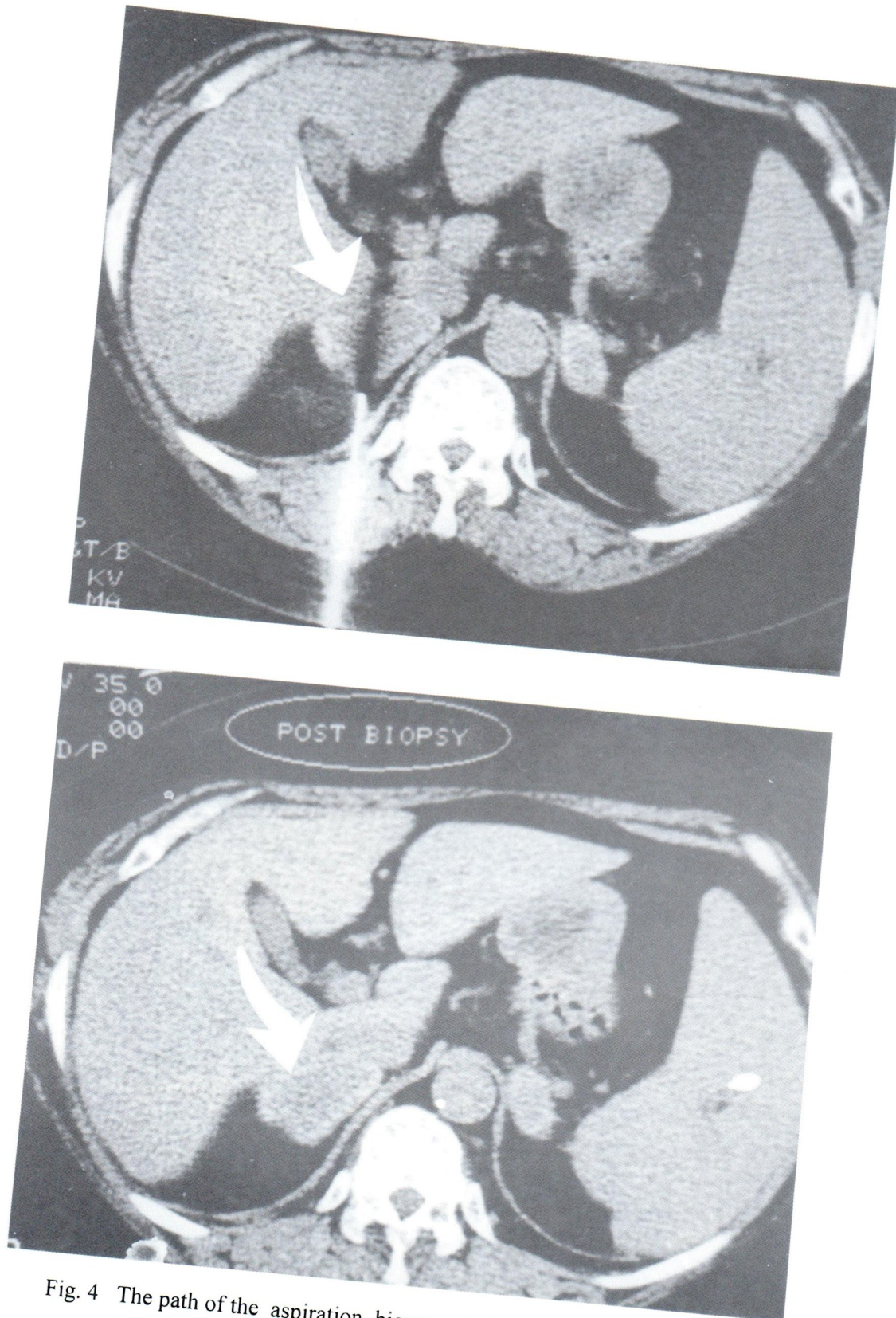


Fig. 4 The path of the aspiration biopsy needle under CT localization was shown with the patient in prone position. There was no significant changes of the appearance of the mass post biopsy.