

## Diagnostic Value of Liver Scan in Operated Echinococcus Cyst

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The high accuracy of liver scans in predicting the size, location and number of space occupying lesions of this organ has been proven repeatedly (1.2.3.)

In this type of lesion it has been shown that hydatid cyst of certain sizes can easily be detected with conventional detectors. (4.5.)

The value of liver scans after an operation for echinococcus is less clear and there is a wide discrepancy in the results reported (6.7.)

This study was undertaken to assess the post-operative value of liver scans.

### Materials and Methods

Liver scans was performed on 32 patients 40 days to 10 years after operation for liver echinococcus. These patients were followed from 6 months to 4 years after the post-operative scan. These scans were selected from a series of 850 liver scans performed during 42 months.

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\* Part of this study was presented at the Radioactive Isotope in Klinik und Forschung Symposium Bad-Gastein, Austria, January 1972.

Scanning was performed using commercial apparatus with a moving detector, a 5-inch crystal, and a 31-hole collimator with a focal depth of 3 inches.

All scans were performed using Au 198; in all cases antero-posterior and right lateral views were taken and occasionally a postero anterior view was added.

Patients were between 22 and 65 years old. 22 were male and 10 female.

The operation consisted of:

1. Germinative membrane excision with drainage in 20 cases.
2. Germinative membrane excision with capsuloraphy and injection of saline in 11 cases.
3. Total cystectomy in 1 case.

After the operation one cyst was found in 21 cases. The maximum number of cysts found in a single case was 6.

The post-operative scanning was performed for the following reasons:

1. Pain or discomfort in the right upper quadrant in 8 cases.
2. Palpable tumor in the right upper quadrant in 15 cases.
3. Presence of cysts in other sites in 2 cases.
4. Non-specific abdominal complaints in 7 cases.

### **Results**

The image of the well-developed hydatid cyst of the liver, while not specific, has certain characteristics which favor this diagnostic i.e. sharp outline of the lesion, complete absence of radioactivity in the lesion, frequent occurrence of compensatory hypertrophy in the remaining parenchyma (Figure 1-2).

Difficulty might arise in differentiating a liver abscess which could give the same image (Fig. 3). Malignant tumors producing irregular and ill-limited lesions (Fig. 4) are seldom confused with echinococcus of the liver.

Our post-operative scans can be classified as follows:

1. Complete restitution and normal liver scan in 8 cases.
2. Partial restitution of the normal liver image in 19 cases. (Figure 5-10).
3. Appearance of new defect in 5 cases. (Figure 11).

A 6-month to 30-month follow-up in the group with normal liver scans has not produced any proof of recurrence.

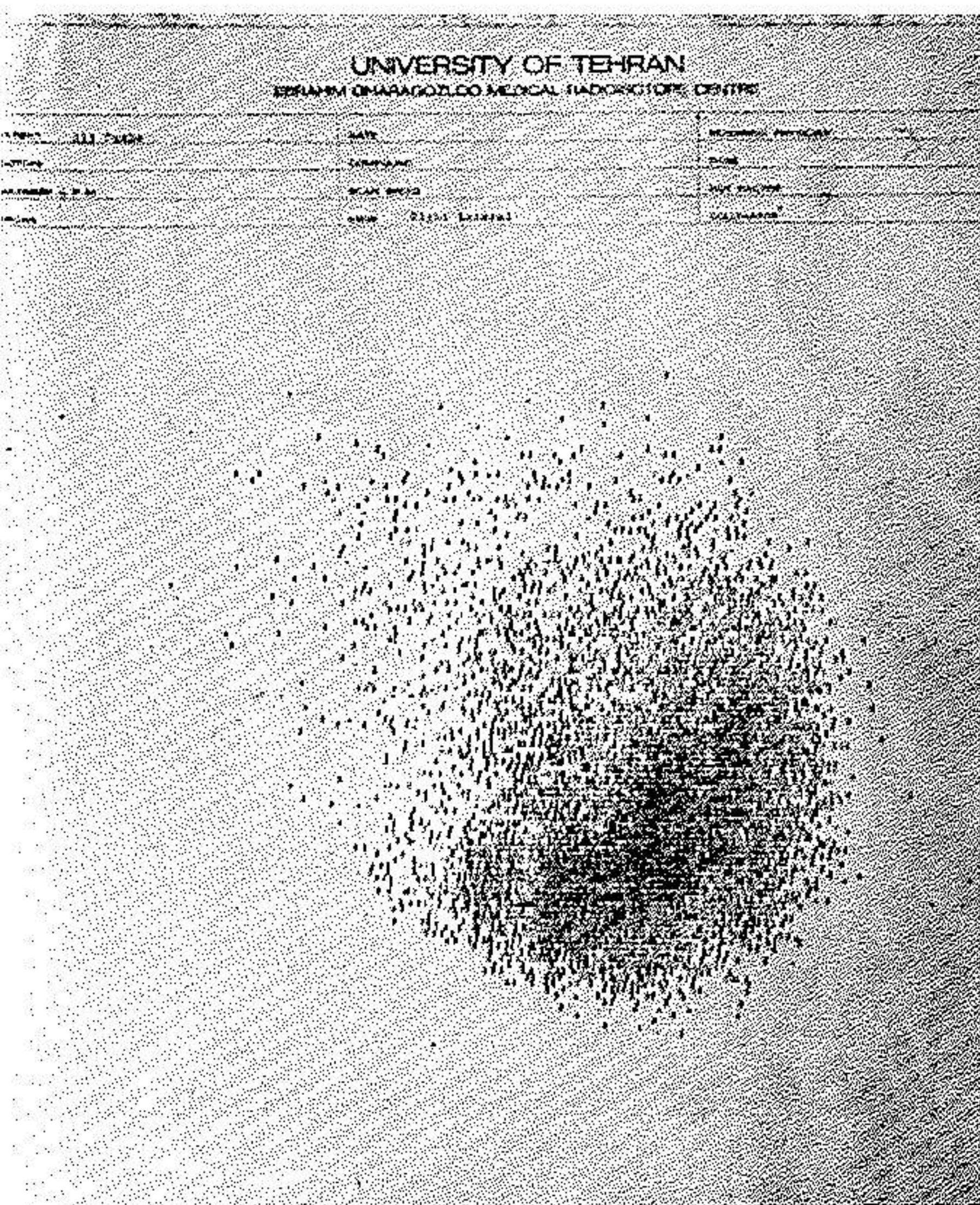
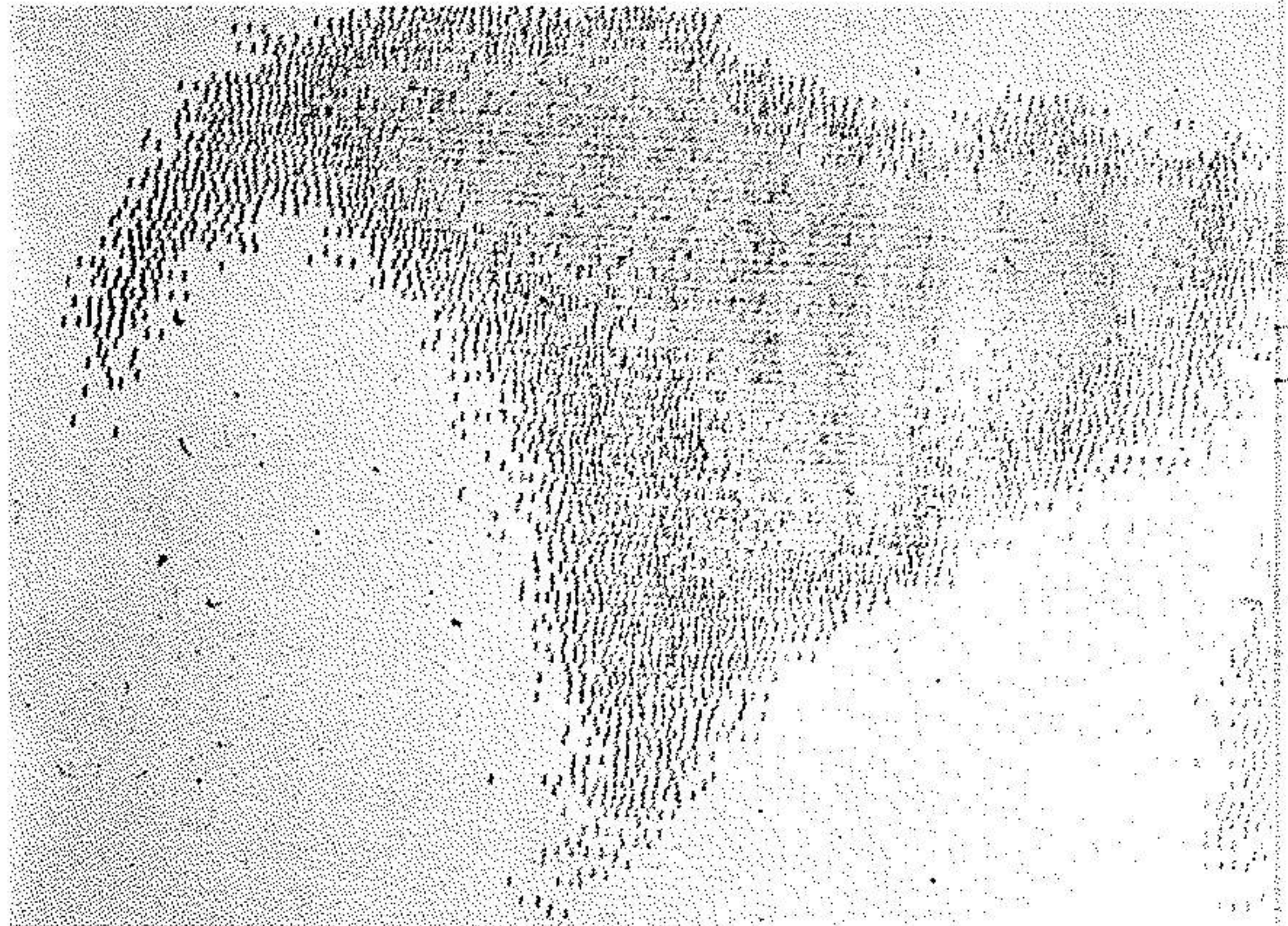
The 5 patients with new defect were operated on, and in each a new cyst was found.

In the remaining cases (59 %) with hypoactive areas remaining at the site of previous operations. 6 were reoperated and in 2 of these a hydatid cyst was found while in 4 there were only scars.

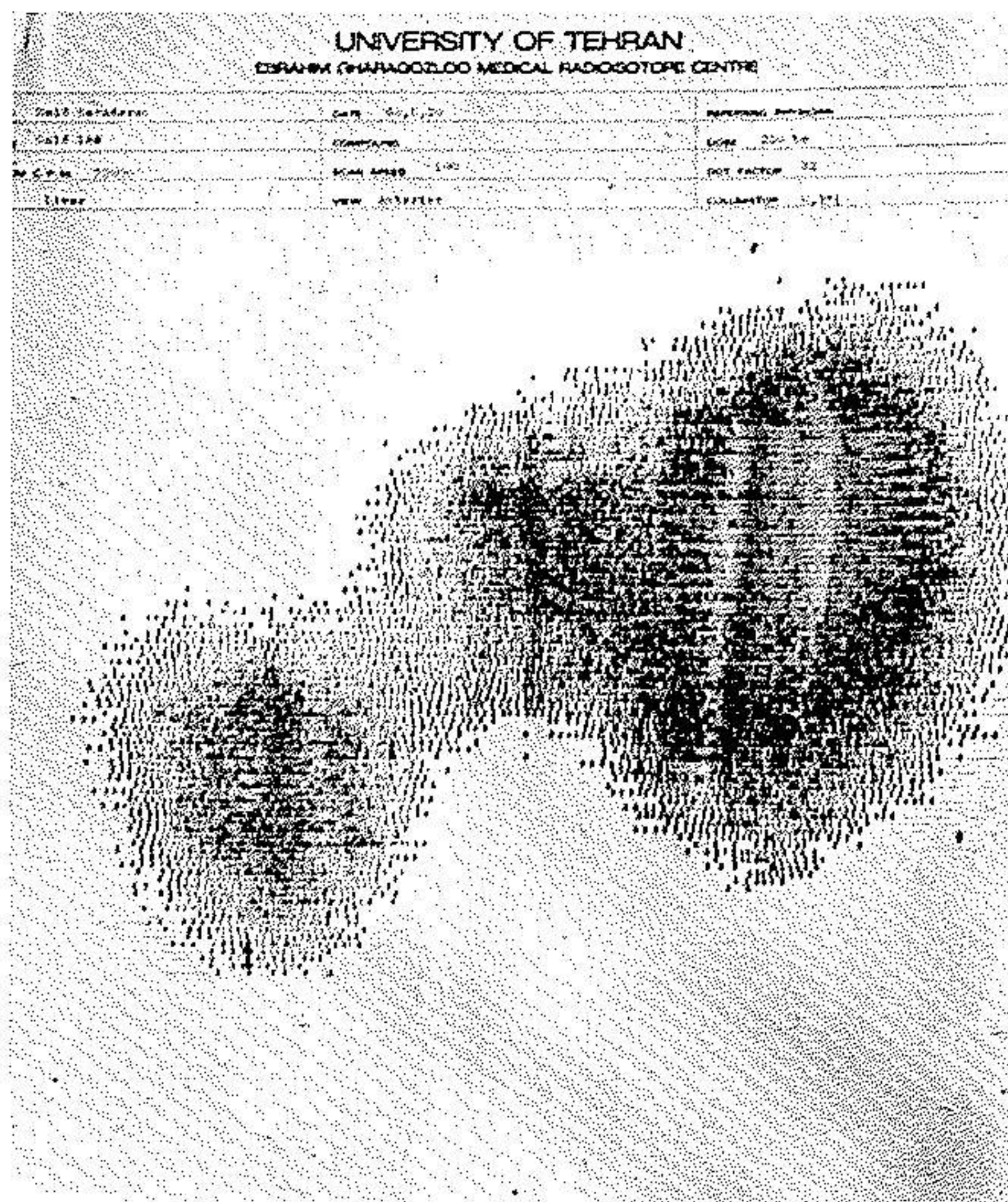
The shape of the remaining defect was not found to be of any value in assessing recurrence, but in each of the 2 cases where hydatid cyst was found at operation, a pre-operative follow up had demonstrated enlargement of the lesion.

While in most H.D. of the liver of some duration, a degree of compensatory hypertrophy was encountered, this was not found to have discriminating value in recurrences.

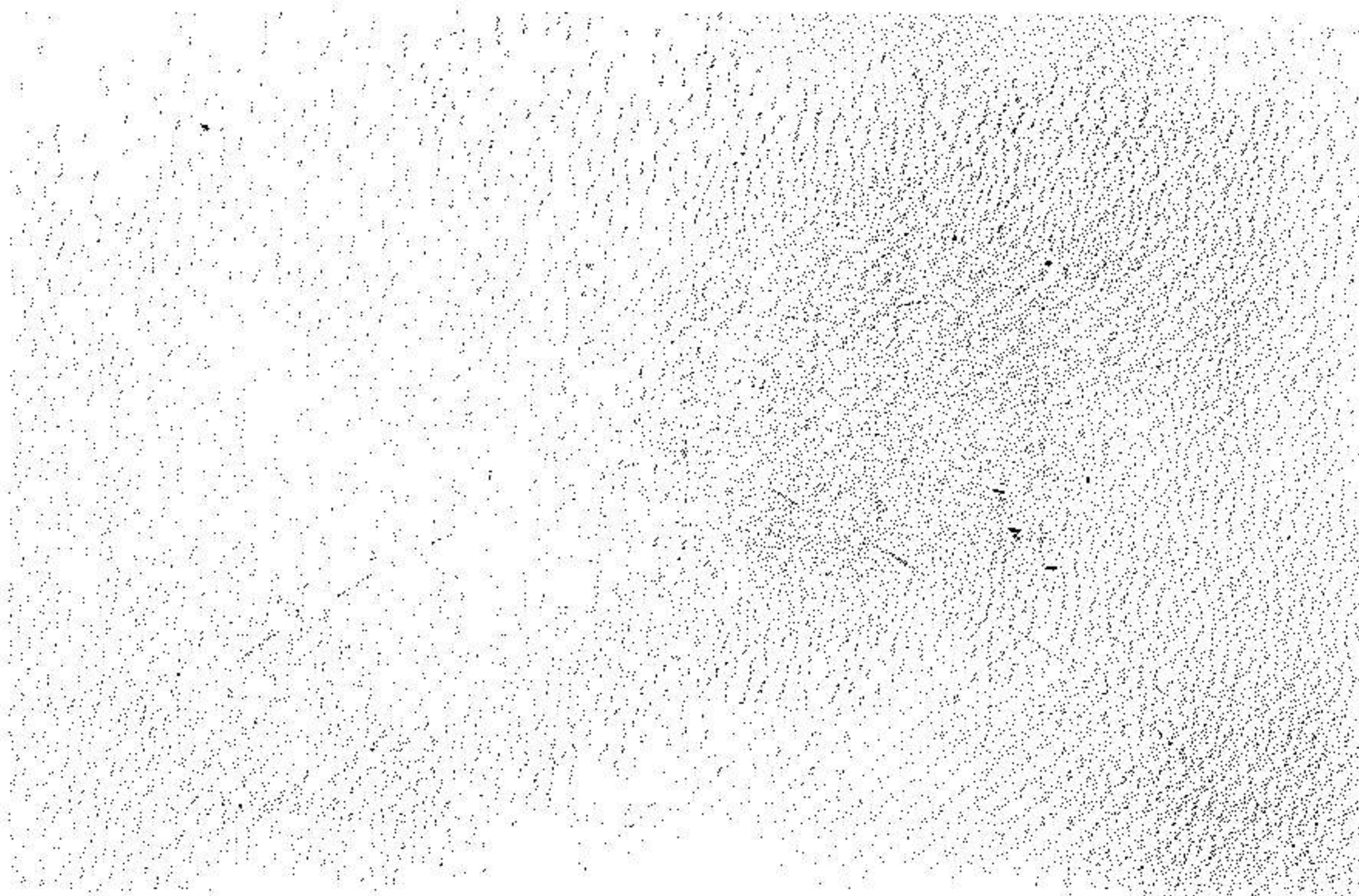
1. Anterior view, hydatid cyst involving the right lobe.



- Right lateral view. Hydatid cyst involving the supero posterior segment of the right lobe.

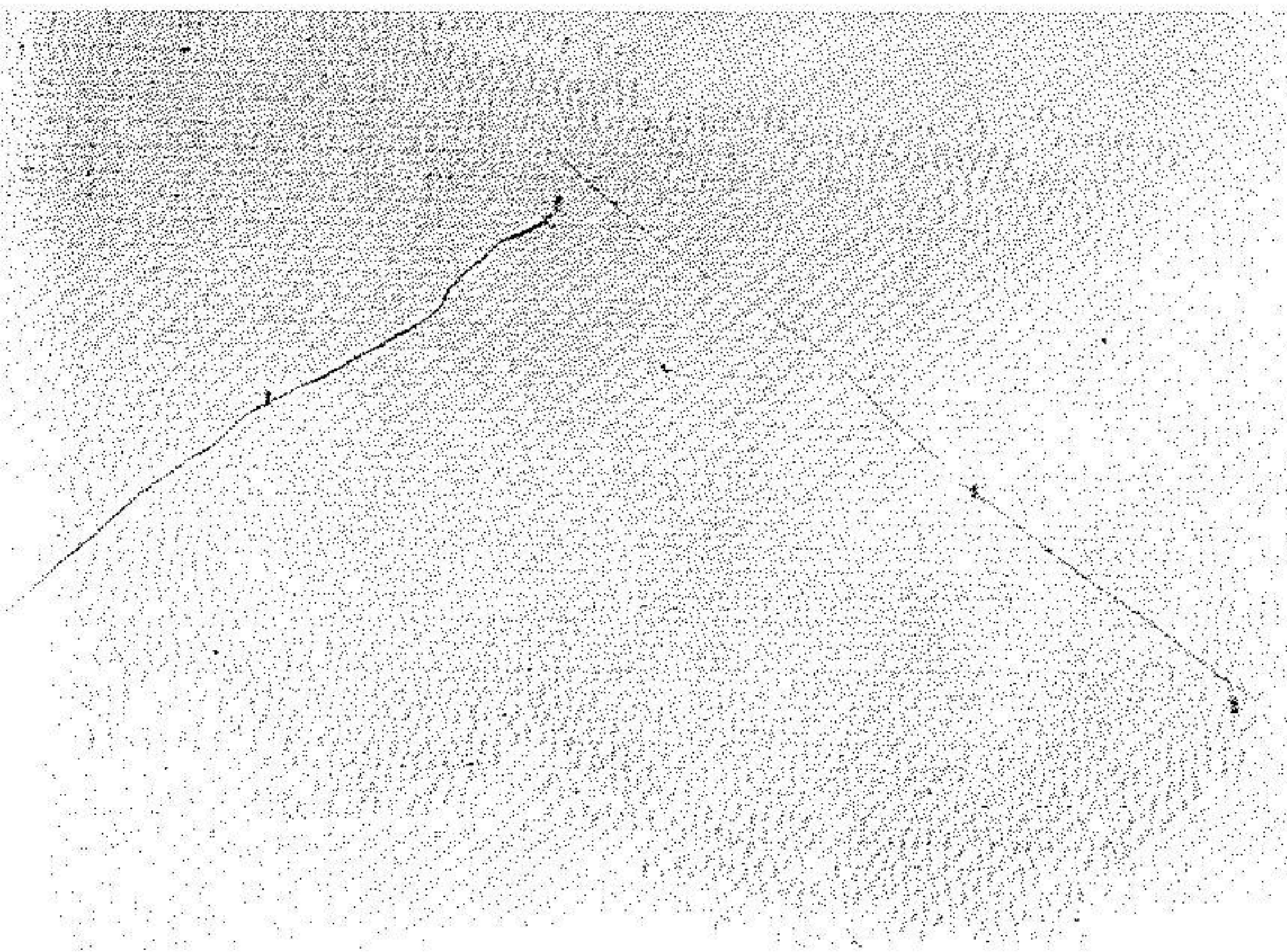
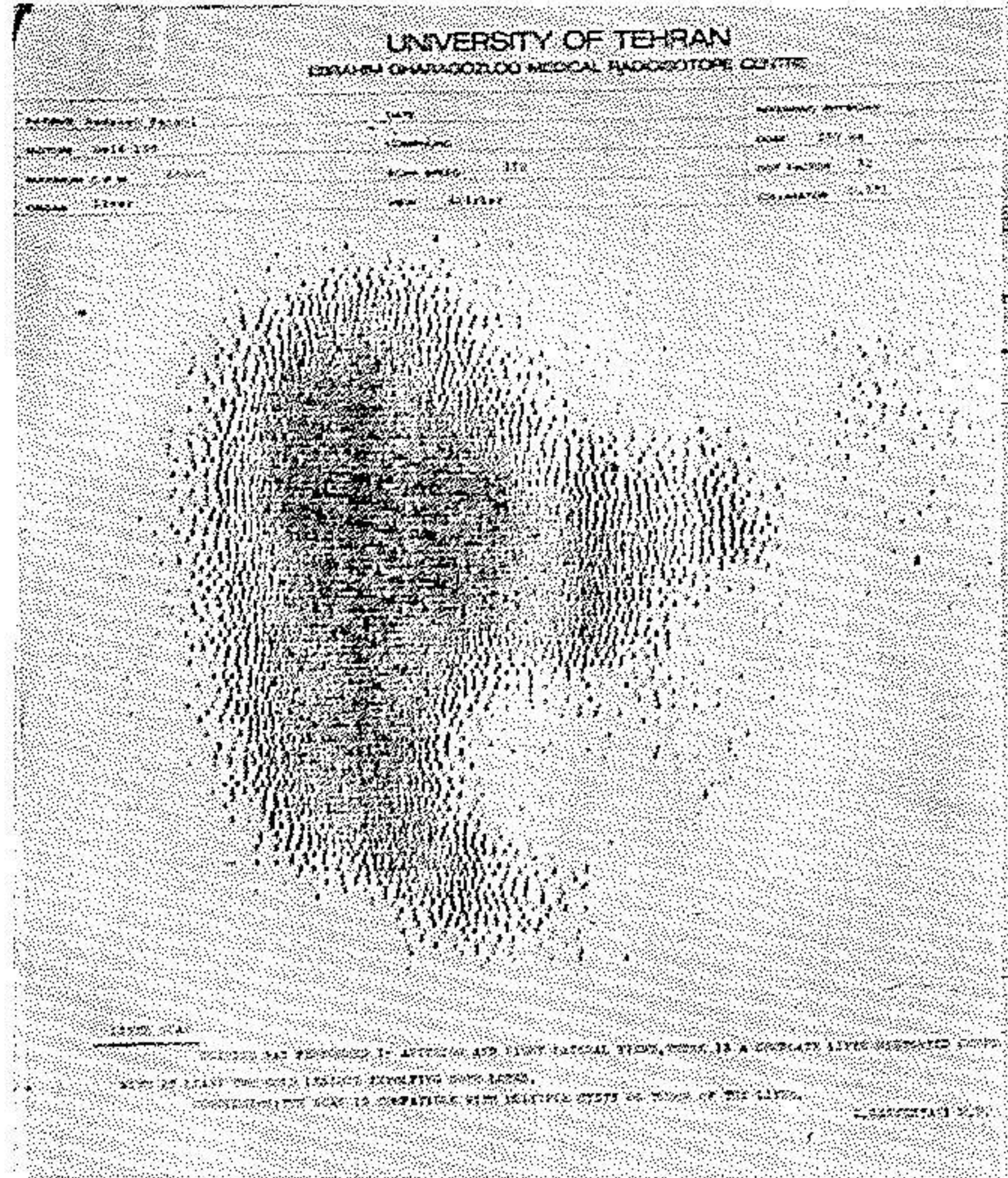


3. Anterior view, abscess involving the upper part of the right lobe.



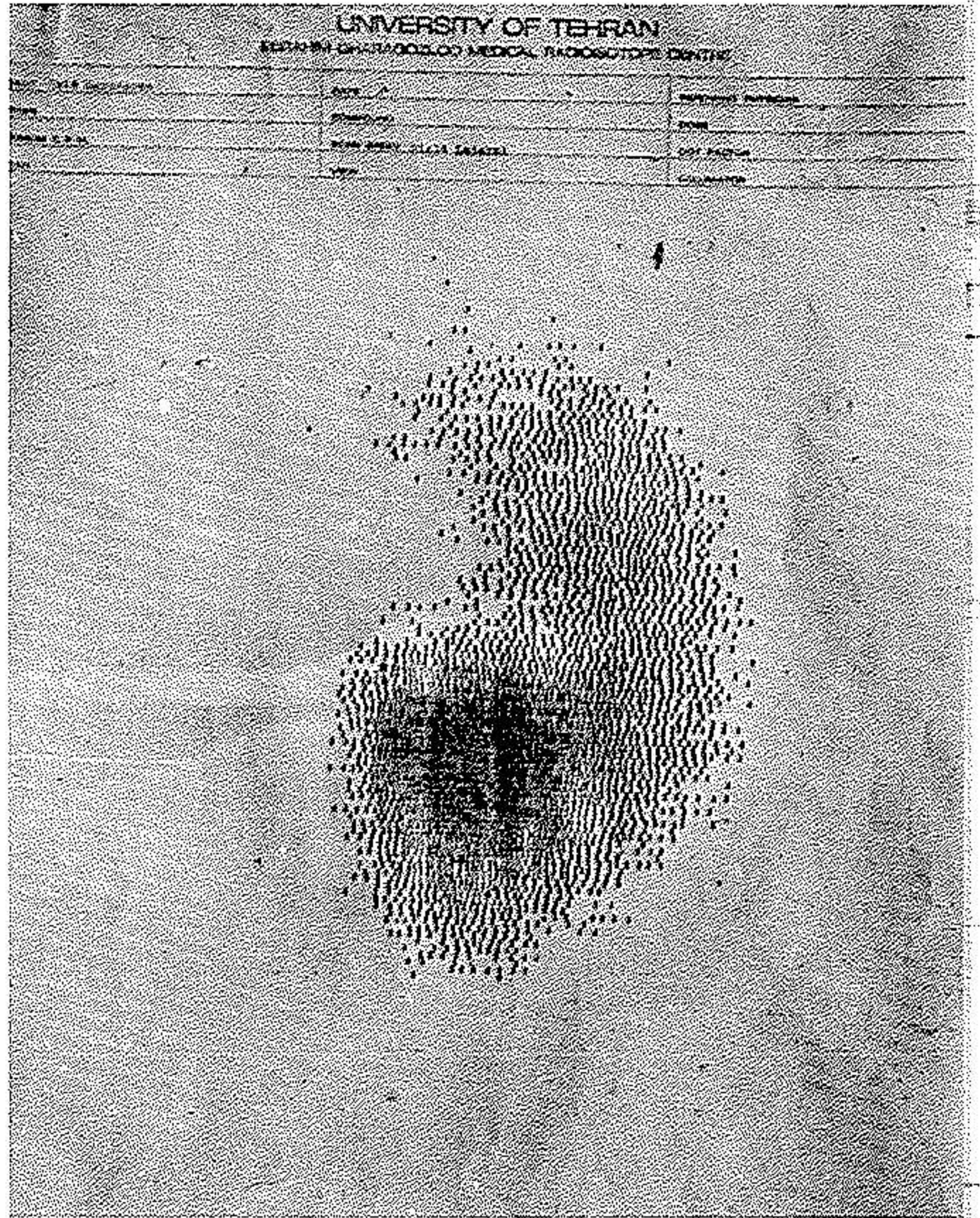
4. Anterior view, carcinoma involving the right lobe.

5. Anterior View, large defect, hydatid cyst involving both lobes.



6. Anterior view, large hydatid cyst involving most of the right lobe. compensatory hypertrophy of the left lobe.

7. Lateral View, same as Fig. 6.



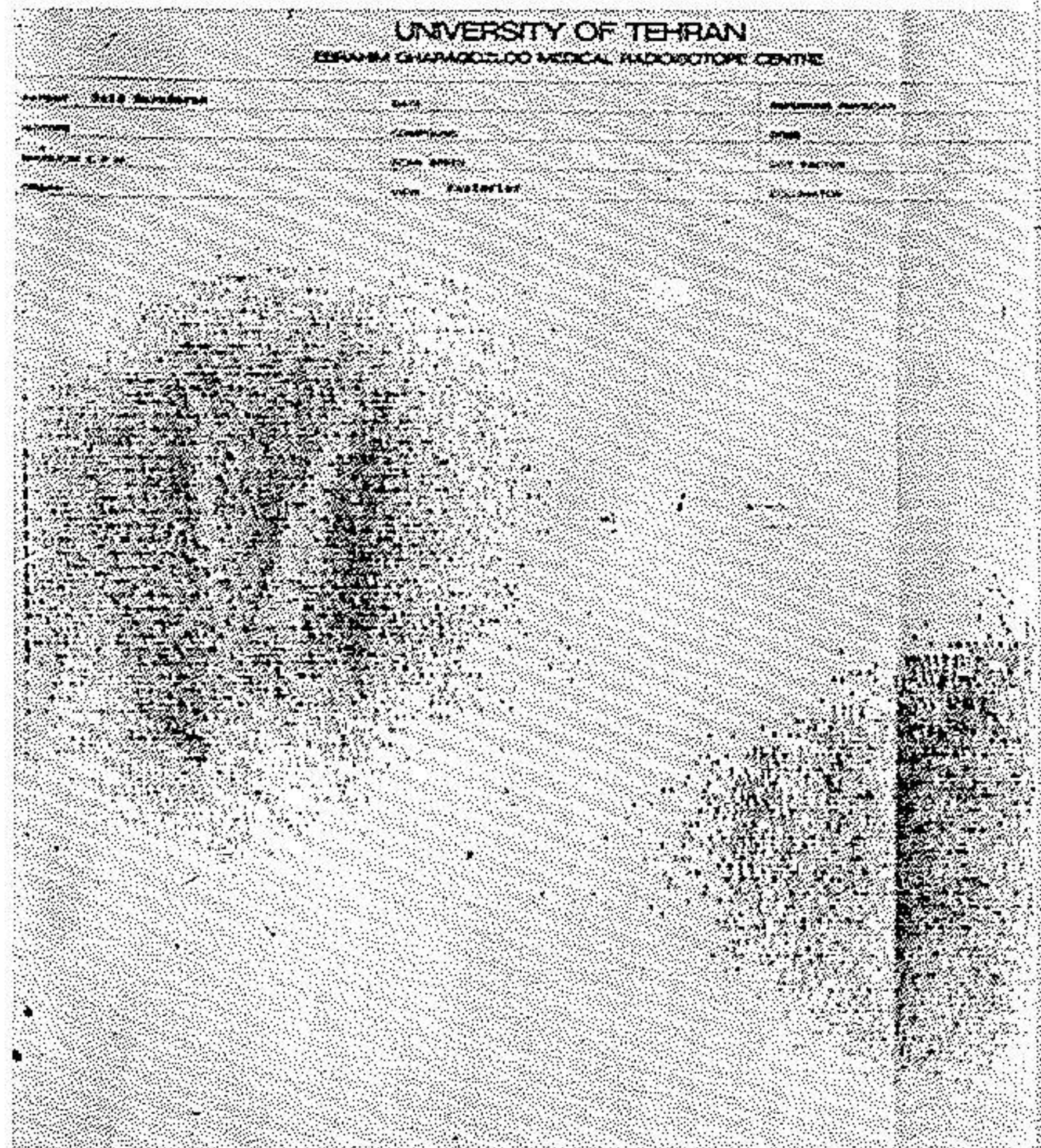
8. Lateral View, same as fig 7 partielle restitution 40 days after operation



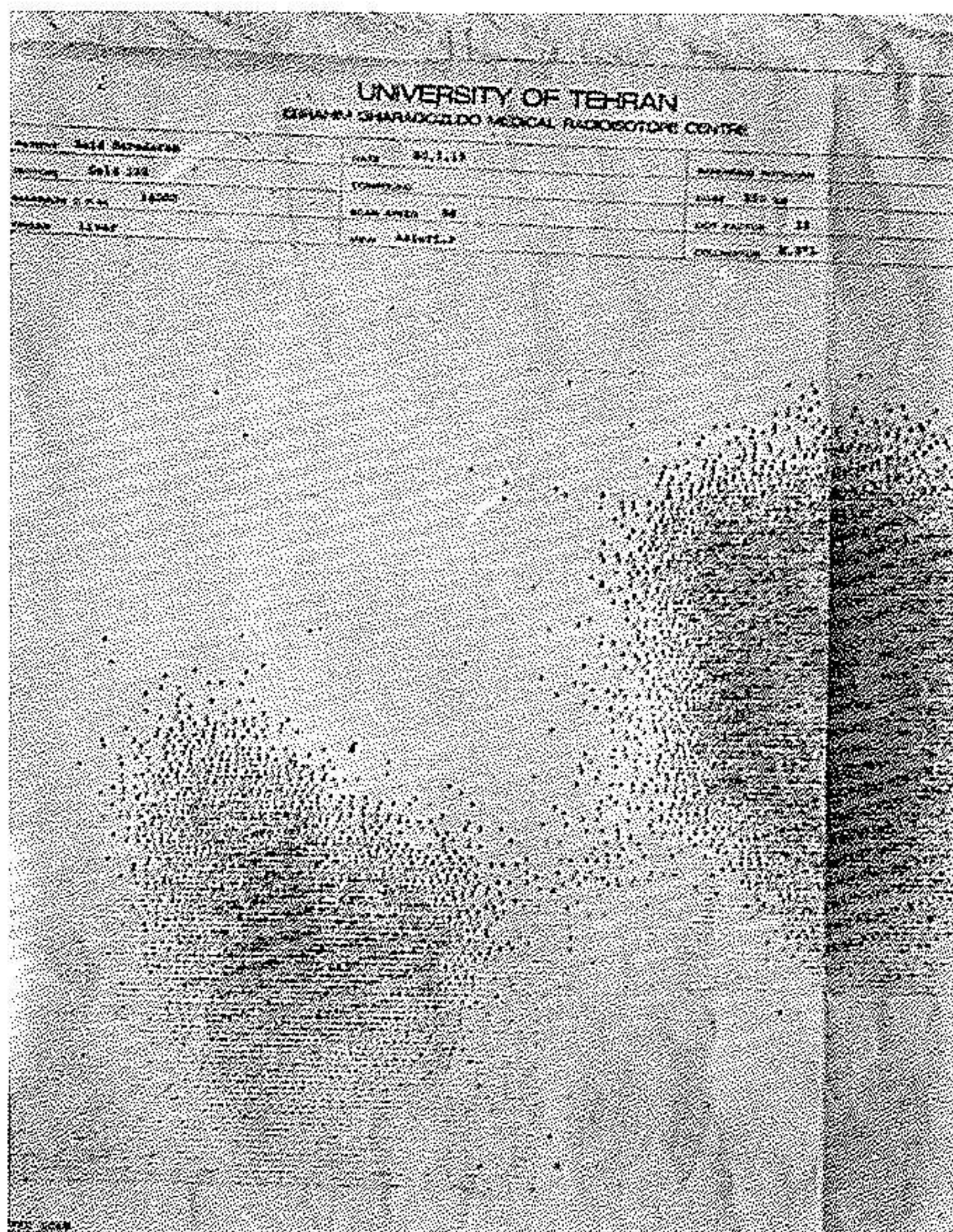


9. Lateral view, same patient as fig. 8. partielle restitution of the supero posterior defect.

10. Posterior View, large defect in the right lobe, minimal restitution 4 years after operation, no evidence of recurrence.







11. Anterior view, appearance of a new defect in the infero anterior segment

The shape of the remaining defect was not found to be of any value in assessing recurrence, but in each of the 2 cases where hydatid cyst was found at operation, a pre-operative follow up had demonstrated enlargement of the lesion.

While in most H.D. of the liver of some duration, a degree of compensatory hypertrophy was encountered, this was not found to have discriminating value in recurrences.

### Conclusion

The post-operative scans were found to be correct in 46 %, wrong in 12 % and of doubtful value in 42 %. The high percentage of doubtful values reflects the limited follow-up. It is likely that a definite correct diagnostic could be made in the majority of cases if repeated scans were taken after a suitable time had elapsed. An alternative for increasing the accuracy would be the discovery of a cystotroph radioisotope.

Post-operative liver scans were also found to be useful in the estimation of the extent of liver parenchymal regeneration.

### Summary

Liver scan was performed in 32 patients 40 days to 10 years after operation. These scans were proved to be correct in 47 % of the cases and wrong in 12 % for the diagnosis of recurrent hydatid cyst.

The doubtful results are probably due to limited follow up.

### French Summary

Nous avons scintigraphie 32 malades quarante jours a dix ans, apres l'operation et avons suivi ces malades apres la scintigraphie.

Cette scintigraphie hepatiche apres l'operation a donne des resultats corrects dans 46 % des cas, faux dans 12 % et indetermines dans 42 %. Le seul moyen d'ameliorer ces resultats est de faire des scintigraphies repetees.

### References

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