

STUDY OF HEALING OF AMOEBIC LIVER ABSCESS BY ROENTGENOGRAPHY

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Amoebic liver abscess is a common complication of intestinal amoebiasis. The patients usually recover after evacuation of pus and administration of amoebicidal drugs. The abscess cavity is replaced by liver tissue and only a little scar is formed (Paul, 1960) but the direction of healing has not been mentioned yet. It was our purpose to study and observe the healing process of the abscess cavity by roentgenography.

MATERIALS AND METHODS

All cases of amoebic liver abscess admitted into the Bangkok Hospital for Tropical Diseases from 1965-1968 for clinical trial of drugs were reviewed. The diagnosis of all cases was based on the presence of typical anchovy or creamy pus, bacteriologically sterile aspirate.

Apart from needle aspiration of pus these patients were treated with various kinds of amoebicidal drugs (emetine hydrochloride, dehydroemetine both parenteral and oral, oral metronidazole, oral naridazole, parenteral aminosidine, and oral Bayer 2456 (derivative of dipyrazole).

Visualization of the abscess cavity was carried out by roentgenological method. During the initial aspiration some 50-100 ml. of pus were withdrawn to relieve tension in the abscess cavity and 5 ml. of opaque medium, (40 per cent iodised oil) was instilled together with some 50 ml. of air. The opaque medium being heavier than pus will line the floor of the abscess cavity while the air will be in the space above. X-ray photographs of antero-posterior and lateral positions were taken at intervals of 2-7 days or

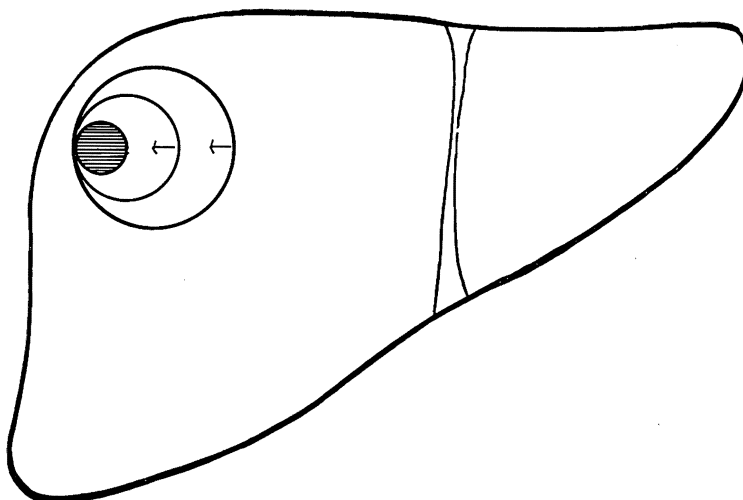


Fig. 1—Diagram showing direction of healing of an abscess cavity.

more depending on the size of the cavity and the persistence of pus. From these two views the size and the direction of healing of the cavity were observed.

RESULTS

Out of some 200 cases of amoebic liver abscess, 125 cases with follow-up films taken

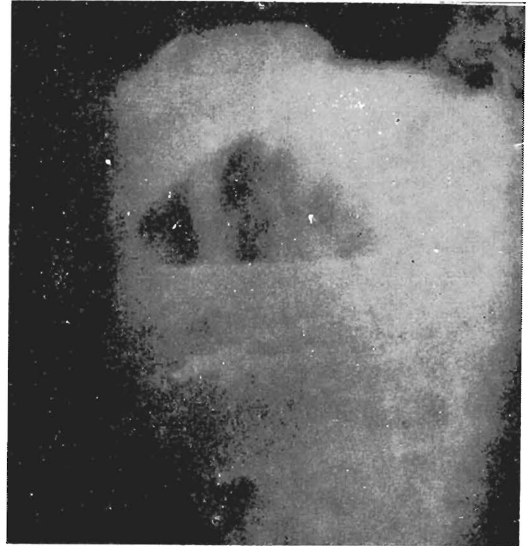


Fig. 2 and 3, 27 Aug. 68.

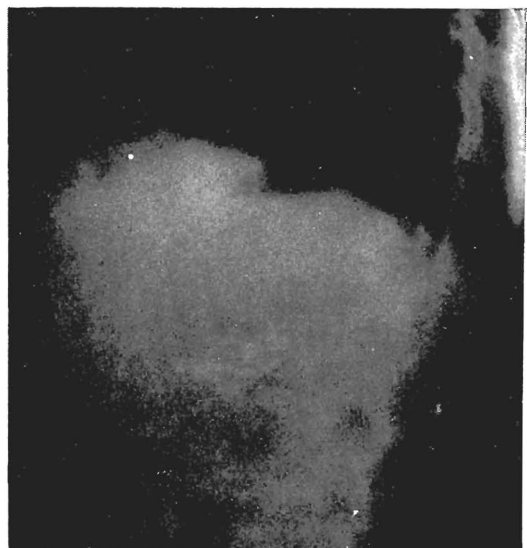


Fig. 4 and 5, 29 Nov. 68.

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at intervals were included in this study. It was observed in all cases that the direction of healing of the cavity was always from the central part of the liver towards the periphery.

The direction of healing is shown in Fig. 1.

Four cases with abscess cavities at different sites of the liver have been selected to illustrate this.

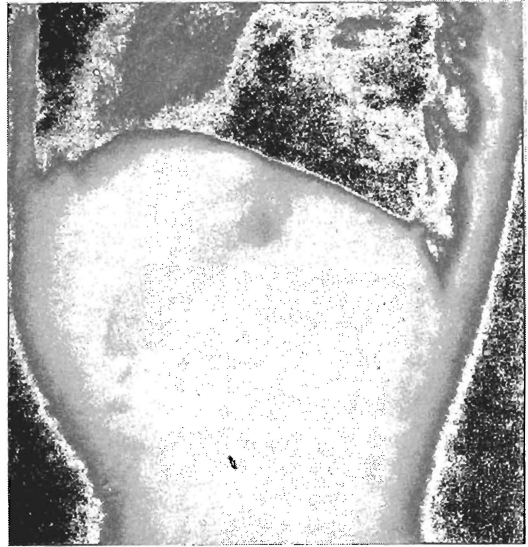
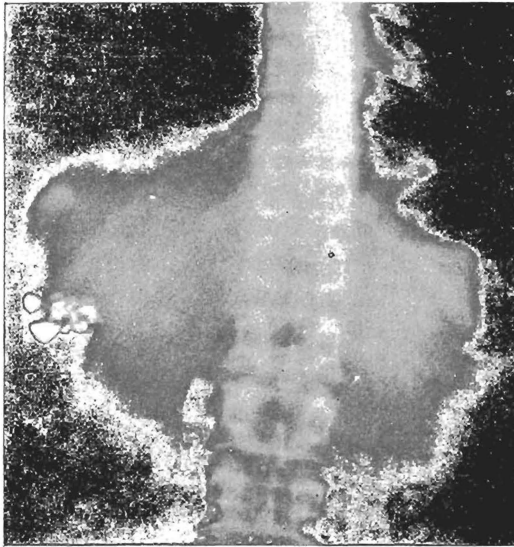


Fig. 6 and 7, 11 Jan. 69.

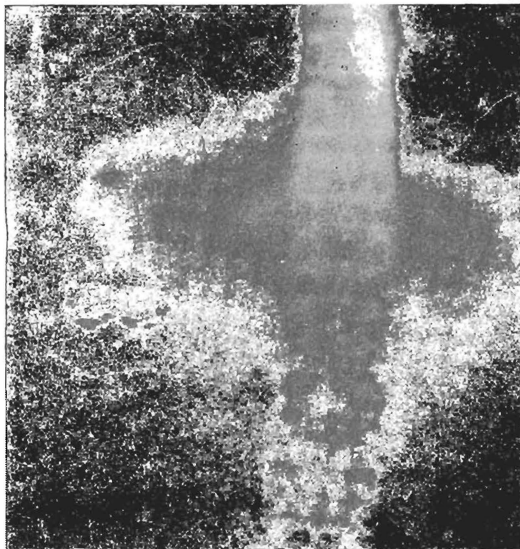


Fig. 8 and 9, 23 April 69.

CASE 1.

A case of amoebic liver abscess situated at the lateral part of the right lobe of the liver.

The patient H. N. 6340 was a Thai male aged 36 and weighed 45.6 kg. He had a

history of pain in the right costal margin for 10 days. The amoebicidal drug used was dehydroemetine 80 mg. daily for 10 days.

The size of the abscess cavity was $13.0 \times 9.8 \times 14.0$ cm. that is, vertical by horizontal by antero-posterior diameters (Fig. 2 and 3).



Fig. 10 and 11, 28 April 69.

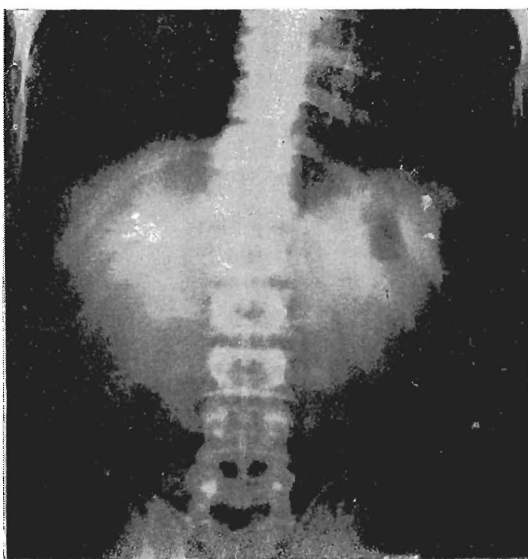


Fig. 12 and 13, 26 June 69.

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It became smaller and was closed in 20 weeks. The cavity was gradually filled from the centre of the liver towards the periphery (Fig. 4 and 5). Finally, the opaque medium was observed at the lateral surface of the liver (Fig. 6 and 7).

CASE 2.

The abscess observed in the radiograph was situated at the postero-superior part of the right lobe of the liver. The patient H. N. 7624, Thai male aged 34, body weight of



Fig. 14 and 15, 20 Dec. 68.



Fig. 16, 2 Jan. 69.

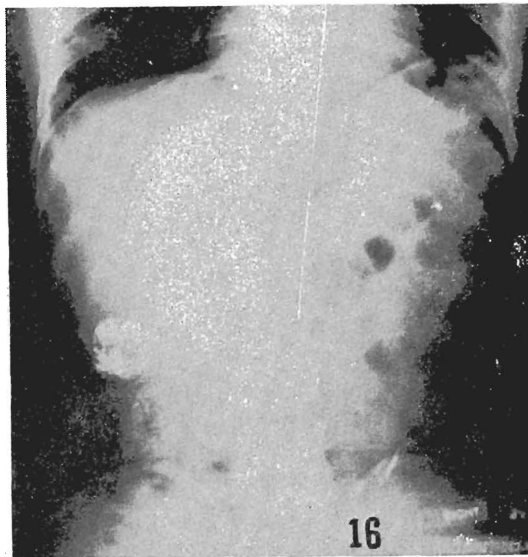


Fig. 17, 3 Feb. 69.

57 kg. was transferred to us from another hospital with complaint of pain in the right costal margin for 17 days. He had an abscess measuring $10.7 \times 9.8 \times 9.2$ cm. situated at the posterosuperior part of the right lobe of the liver (Fig. 8 and 9). He was treated daily with

60 mg. of dehydroemetine intramuscularly for 10 days. The cavity healed from the centre towards the periphery of the liver (Fig. 10 and 11) and was closed in 9 weeks (Fig. 12 and 13).



Fig 18 and 19, 22 Nov. 68.



Fig. 20 and 21, 17 Dec. 68.

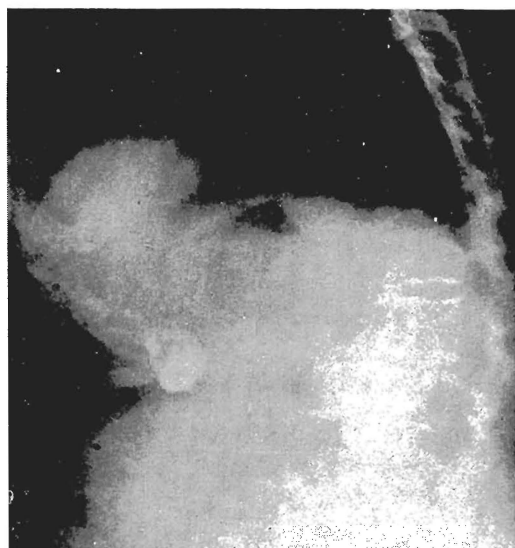
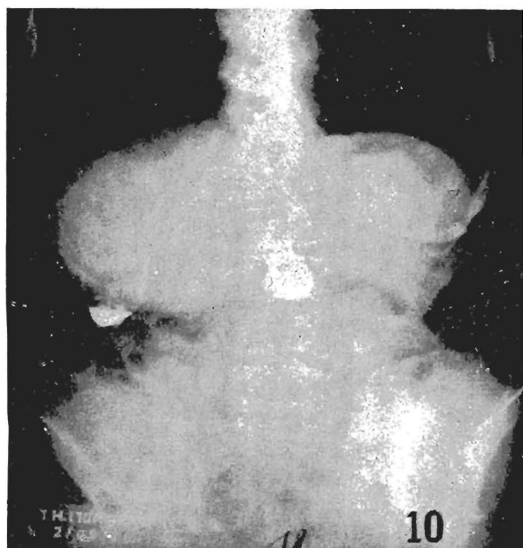


Fig. 22 and 23, 4 Feb. 69.

CASE 3.

An abscess situated at the latero-inferior part of the right lobe of the liver. The patient H. N. 7007, Thai male aged 34, weighing 55 kg. had a history of pain at the right costal margin for 8 days. The amoebicidal drug used was oral dehydroemetine at a dosage of 80 mg. daily for 10 days. The size of the cavity was $12.7 \times 11.8 \times 9.7$ cm. (Fig. 14 and 15). When the abscess cavity healed, it was again observed to heal from the centre of the liver towards the periphery (Fig. 16). The cavity was closed in 7 weeks (Fig. 17) and the opaque medium was found to be at the periphery of the liver.

CASE 4.

A case with two abscess cavities one at the latero-inferior and another at the epigastric part of the liver. The patient H. N. 6845, Thai female aged 73, body weight of 39.1 kg., had a history of pain at the right costal margin and epigastrium for about a week. This case was treated with metronidazole at a dosage of 2.0 gm. daily for 5 days.

The abscess cavity at the latero-inferior part of the liver measured $11.8 \times 8.2 \times 9.0$ cm. and the cavity at the epigastrium measured $9.0 \times 7.3 \times 7.1$ cm. (Fig. 18 and 19). Twenty five days later both cavities became smaller and healed from the centre of the liver towards the periphery (Fig. 20 and 21). The one at the epigastrium healed in 9 weeks (Fig. 22 and 23), the opaque medium was present at the periphery of the liver.

DISCUSSION

Visualization of an abscess cavity in the liver by roentgenological method was first reported by Boland, (1931) who instilled radio-opaque medium (lipiodol) into an amoebic abscess cavity. The technique was improved by Chung *et al*, (1939) who injected air and lipiodal into the abscess cavity. In 1949 Harinasuta and Harinasuta introduced the method of Chung *et al*, to study the rate of healing of liver abscess in Thailand. Since then this method of visualization of an abscess cavity has been carried out at Siriraj

Hospital and the Bangkok Hospital for Tropical Diseases. The follow-up study of healing of the abscess cavity was also carried out by filming at intervals until the cavity finally closed; this usually took a much longer time than the disappearance of other symptoms and signs (Harinasuta *et al*, 1969).

Chung *et al*, (1931) did not mention the direction of healing of the cavities, and on reviewing their X-ray pictures which appeared in their report, in all 3 cases (case 60123, case 60693 and case 62513) the healing process was from the centre towards the periphery of the liver.

Although the healing of amoebic liver abscess depends on size of the cavity, the general condition of the patient, evacuation of pus and the medication used, the direction of healing process is always the same, that is, from the central to the peripheral part of the liver, bearing no relation to the duration of healing.

It may be assumed that the liver cells regenerate more rapidly from the central part; further, it may be closely related to the anatomical structure of the arterial supply of the liver.

SUMMARY

Healing of amoebic liver abscess was studied in 125 patients using radio-opaque medium and air to visualize the cavity. It was noted that the abscess cavity healed from the central towards the peripheral part of the liver.

X-ray pictures of four patients with different locations of abscess in the liver are presented.

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