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DIAPHRAGMATIC HERNIA IN BUFFALOES

(With 10 Figures)

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فتق الحجاب الحاجز في الجاموس

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من المعروف أن فتق الحجاب الحاجز شائع الحدوث فى الأبقار ولكن الملاحظ فى الآونة الأخيرة هو زيادة نسبة حدوثه فى الجاموس. وفى هذا البحث تم تسجيل عدد ١٢ حالة فتق للحجاب الحاجز فى الجاموس. وقد تعرضت جميع هذه الحالات للدراسة الوافية مشتملة على تاريخ الحاله ، الأعراض السريرية ، فتح البطن ، فتح الكرش ، فتح الصدر والفحص التشريحى بعد الوفاة - وتراوح عمر الحالات المصابة بين سبعة أشهر وعشر سنوات وكانت معظم هذه الحالات فى حالة حمل متقدم أو بعد الولادة مباشرة . وقد وردت هذه الحالات إلى المستشفى بسبب النفاخ المتكرر وفقد الشهية مع إمساك أو إسهال ونقص مفاجئ فى انتاج اللبن. وأفاد الفحص السريرى عن نقص فى حركة الكرش وإيجابية فى إختبارات الألم وكاشف المعادن فى معظم الحالات. أيضا كان هناك زيادة فى عدد كرات الدم البيضاء وقلوية الدم ، وقد أمكن فى ٧ حالات فقط تشخيص فتق الحجاب الحاجز من عملية فتح البطن وإندفعت محتويات الكرش المخلوط بالغازات من الكرش فور فتحه ووجد أن جزء كبير من القلنسوه داخل الصدر وأمكن تحديد مكان فتحة الفتق فى جدار الحجاب الحاجز على يمين القلب وبالقرب من جدار البطن السفلى. وأمكن أيضا تشخيص وجود أجسام غريبة فى ٤ حالات عند فتح الكرش و٤ حالات أخرى عند الفحص التشريحى بعد الوفاة. وكان قطر الفتق يتراوح بين ١٥ - ٢٥ سم ووجد ملتصق بالأنسجه المحيطه به وقد أمكن الكشف الجراحى عن الفتق بإجراء فتح للصدر بعد إزالة الضلع السادس ولكن إعادة الفتق إلى مكانه الأصلى كان مستحيلا بسبب الإلتصاقات الشديدة مع الأنسجه المحيطه.

SUMMARY

Although diaphragmatic hernia is infrequently reported in cattle, the incidence in buffalo seems to be increasing. 12 cases of diaphragmatic hernia were recorded in buffaloes. Cases were subjected to full study

including history, clinical symptoms, laparotomy, rumenotomy, thoracotomy and P.M. findings. Age of presented cases varies between 7 months and 10 years and almost diagnosed in advanced ages of pregnancy or just after parturation. Cases were presented with history of recurrent tympany, persistent anorexia with occasional diarrhea or constipation and sudden decrease of milk yield. Ruminal motility was increased. Pain tests and metal detector were positive in most cases. Tachycardia with systolic murmurs was evident. Leucocytosis and slight to moderate increase of pH value were determined. In 7 cases, the hernial swelling can be palpated through abdominal exploration. Frothy and foamy ruminal contents were gushed out after rumenotomy. Part of the reticulum was found herniated inside the thorax. The hernial ring was located right to the median plane and near the ventral abdominal wall. Foreign bodies were detected in 4 cases in the herniated reticulum during rumenotomy and in 4 cases during post mortem examination. The hernial swellings were 15-25 cm in diameter and adhesions were detected with the nearby structures. Right 6th rib resection was found satisfactory for hernial swelling exposure. Reduction was impossible due to severe adhesions and extensive manipulation may lead to lung collapse.

Key words: Hernia, Buffaloes, Diaphragm.

INTRODUCTION

Although diaphragmatic hernia is infrequently reported in cattle (Kumar; Kohli, Prasad, Singh and Sharma, 1980), the incidence in buffalo seems to be increasing (Lyer, 1969; Kohli and Kumar, 1969; Kaik and Mahandale, 1969; Dhablania, 1971; Doere and Jahagirdar, 1971; Prasad et al., 1977; Singh; Prasad; Kumar; Kohli and Rathod, 1977; Deshpande; Krishnamurthy; Peshin; Chandna and Nigam, 1982; Krishnamurthy; Nigam and Sharma, 1983 and Horney and Wallace, 1984). The present study has dealt with 12 cases of Diaphragmantic hernia diagnosed in Egyptian buffaloes. According to the available literatures this record may be for the first time reported.

MATERIALS and METHODS

12 cases of diaphragmatic hernia were recorded during the period from Jan. 1995 to Dec. 1996 in buffaloes at the veterinary clinic, Faculty

of Veterinary Medicine, Assiut University. Case history, clinical symptoms, laboratory, laparotomy, rumenotomy, thoracotomy and post mortem findings were recorded. Diagnosis was confirmed after left flank laparotomy and rumenotomy. Ruminal fistula was applied after rumenotomy and left for variable periods until thoracotomy was performed.

Rumenotomy operation was performed in standing position under effect of paravertebral and local infiltration analgesia of 2% lignocaine Hcl solution. Contrast radiography was performed in some cases for justification of our results. Empty plastic ballon connected with 2 meter polyethyline catheter was introduced inside the hernial swelling during rumenotomy operation then barium sulphate was injected and lateral projection was porformed. Thoracotomy through right 6th rib resection was performed in left lateral recumbency and under effect of local infiltration analgesia and Rompun premedication in a dose rate of 0.05 mg/Kg b.w. as a tranquilizer. Slaughtering of animals was performed during or just after thoracotomy operation and post mortem findings were recorded.

RESULTS

Case history:

Age of presented cases varies between 7 mo -10 Yr (7 mo = 1 case, 2 Yr = 2 cases, 3 Yr = 2 cases, 5 Yr = 2 cases, 6 Yr = 1 case, 7 Yr = 1 case, 8 Yr = 2 cases and 10 Yr = 1 case). The condition was diagnosed in pregnant animals (= 5 cases), in a period from 2 days till-2 mo. after calfing (= 4 cases) and in non-pregnant animals (= 3 cases).

All cases were presented with a history of capricious appetite, loss of general condition and slight to moderate reccurent tympany mainly at the left flank for a long time before presentation (up to two months). Reduction of milk yield was detected in lactating animals. Scanty, black and pasty to hard feces were detected in 6 cases.

Clinical findings:

Pain test revealed positive results and response of the animal is expressed in the form of retraction of mouth commissure, protrusion of the tongue, epiphora and grunts are occasionally present. Ruminal motility was increased (hypermotility) specially in cases associated with vagal indigestion. Metal detector indicated positive results in 8 cases

mural reticular calcified abscess containing a small metal object in addition to another perireticular abscess.

DISCUSSION

Diaphragmatic hernia is defined as herniation of a portion of the reticulum through a diaphragmatic defect or rupture (Blood and Radostits, 1989). Congenital and acquired herniation of abdominal organs into the chest cavity have been reported in farm animals. Most of acquired cases occur because of the weakening of the diaphragm by lesions of traumatic reticuloperitonitis. Perforation of the wall of the reticulum by a sharp foreign body intially produces an acute local peritonitis which may cause damage to the diaphragm and diaphragmatic hernia may result (Whitlock, 1980; Deshpande et al, 1982; Krishnamurthy et al, 1983 and Blood; Radistits and Henderson, 1983). In the present study 8 cases had foreign bodies mostly penetrating the herniated part of the reticulum. This result justifies the suggestion that traumatic reticuloperitonitis is a predisposing factor for reticular hernia in buffaloes. Other causes of diaphragmatic hernia may be related to pregnancy and straining during parturation. In the present study 5 cases were pregnant and other 4 cases were presented after parturation. However, violent trauma to the abdomen and resultant rupture of the diaphragm can not be egnored as a cause of diaphragmatic hernia (Robison, 1956).

The reticular hernia in buffalo occurs at the musculotendinous junction of the diaphragm, ventral to foramen vena cava and slightly right to the median plane (Horney and Wallace, 1984). In all cases, hernial swellings were present right to the heart and near the ventral abdominal wall. Capricious appetite, loss of condition and persistent moderate tympany occur in most cases. Antimortem diagnosis and successful treatment have rarely been reported (Scott and Fishback, 1976 and Orsini, Koch and Stewart, 1981) and usually the diagnosis is made at necropsy. In the present study clinical signs, laboratory and laparotomy findings maight facillitate prelimenary diagnosis but confirmatory diagnosis was obtained after rumenotomy.

Surgical correction is the only effective treatment for diaphragmatic hernia. The surgical approach is difficult and closure of the defect is nearly impossible, however, several cases have been successfully repaired both in practice and in academic institutions (Troutt; Fessler;

Page and Amstutz, 1967; Kirkbride and Noordsy, 1968; Singh et al., 1977 and Hall, 1984).

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LEGENDS OF FIGURES

Fig. 1: Showing presence of a soft, foamy and borridge-like contents of the rumen in an animal affected with diaphragmatic hernia.

Fig. 2: Contrast radiography showing diaphragmatic hernia (Lateral projection).

Fig. 3: Showing ruminal fistula following rumenotomy operation as temporary treatment of diaphragmatic hernia.

Fig. 4: Showing position of the herniated reticulum within the thoracic cavity during thoracotomy operation.

Fig. 5: Showing postmortem picture of diaphragmatic hernia in a buffalo.

Fig. 6: Showing postmortem picture of diaphragmatic hernia in a buffalo calf. (Note the extention of the hernial swelling to the level of fourth rib and adhesion of different lung lobes with the hernial swelling.

Fig. 7: Showing postmortem picture of diaphragmatic hernia (Note reflection of the pleural covering and seat of pressure of ring over hernial swelling).

Fig. 8: Showing postmortem picture of herniated reticulum within the thoracic cavity with presence of foreign bodies fixing it to the sternum.

Fig. 9: Showing sewing needle imbeded at the most anterior part of the hernial swelling.

Fig. 10: Showing calcified abscess inside the wall of the herniated reticulum.

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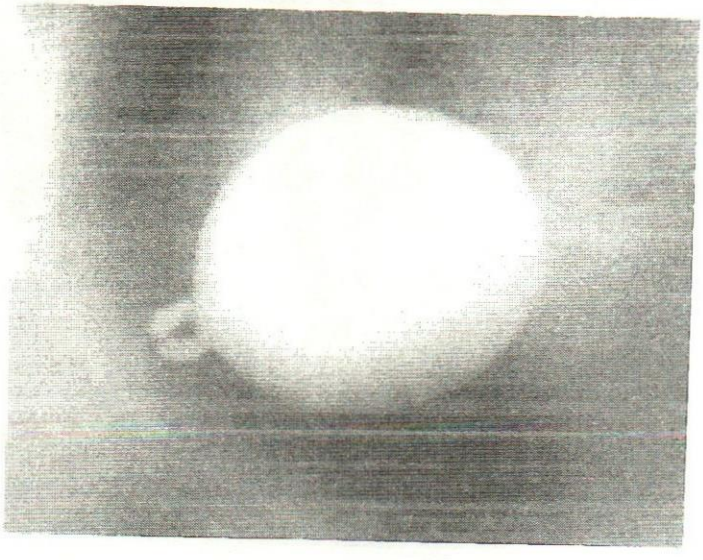

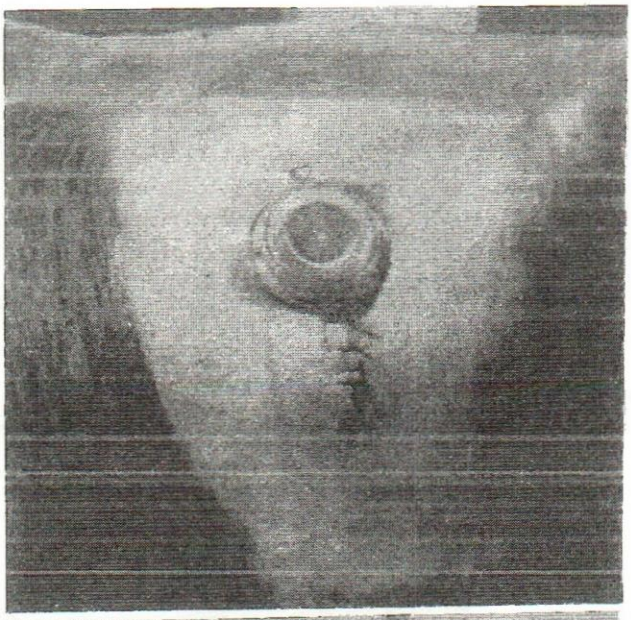

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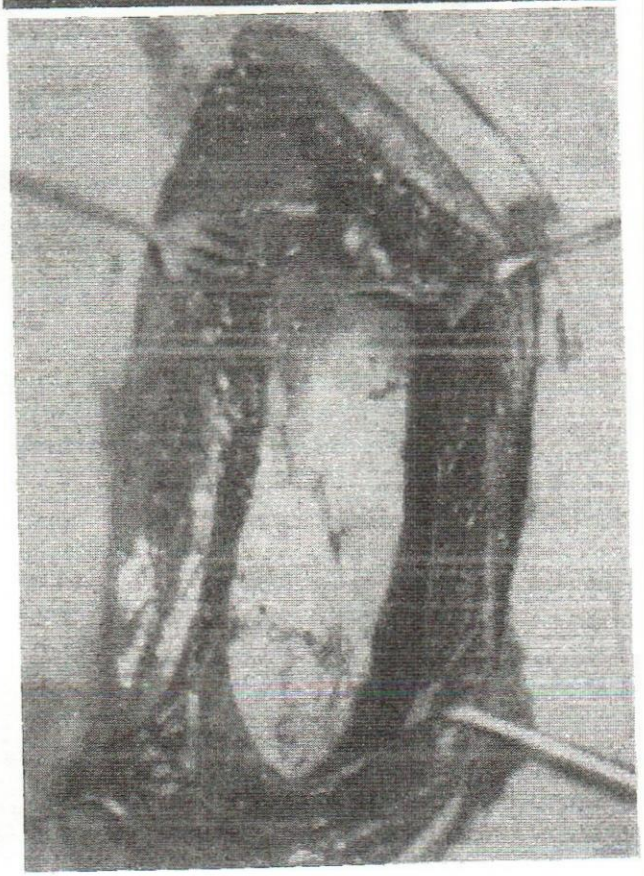

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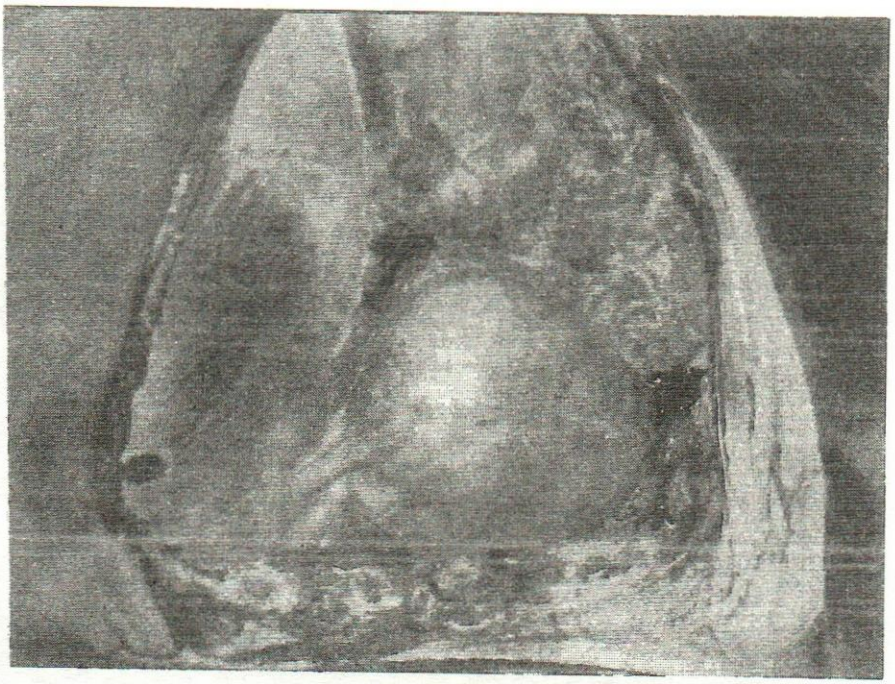

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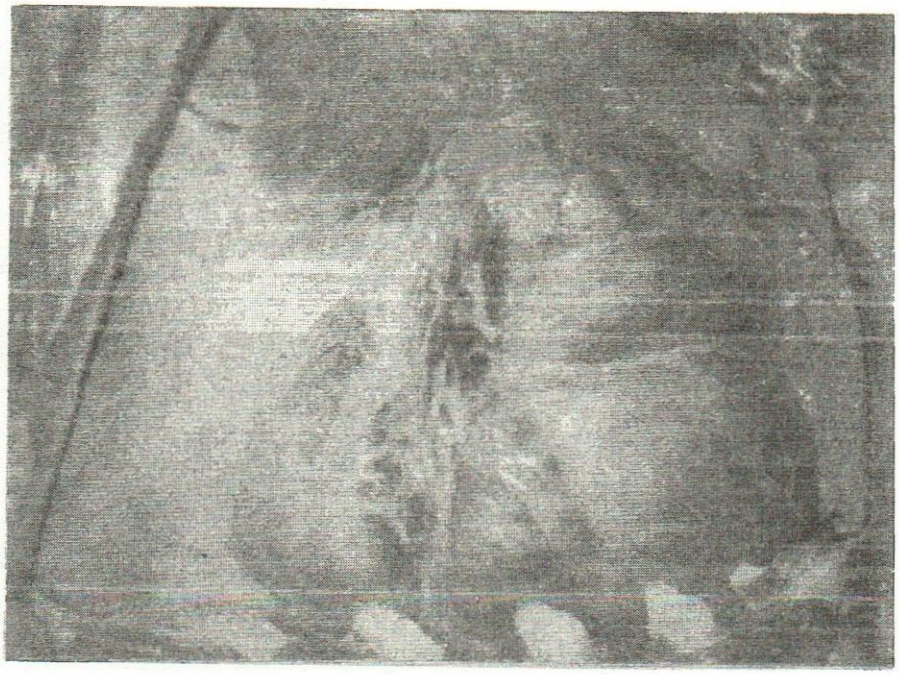

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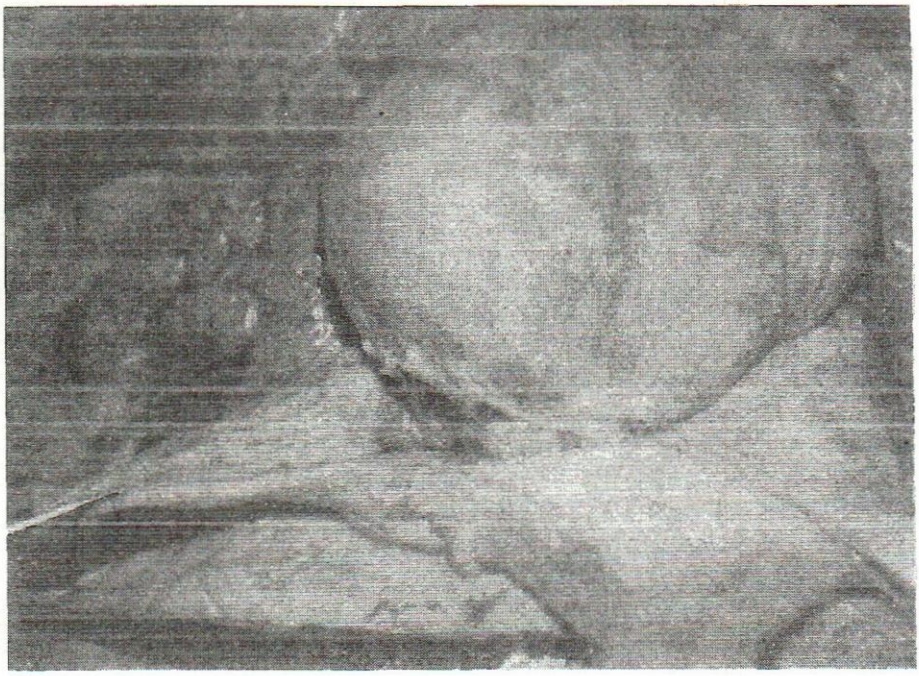

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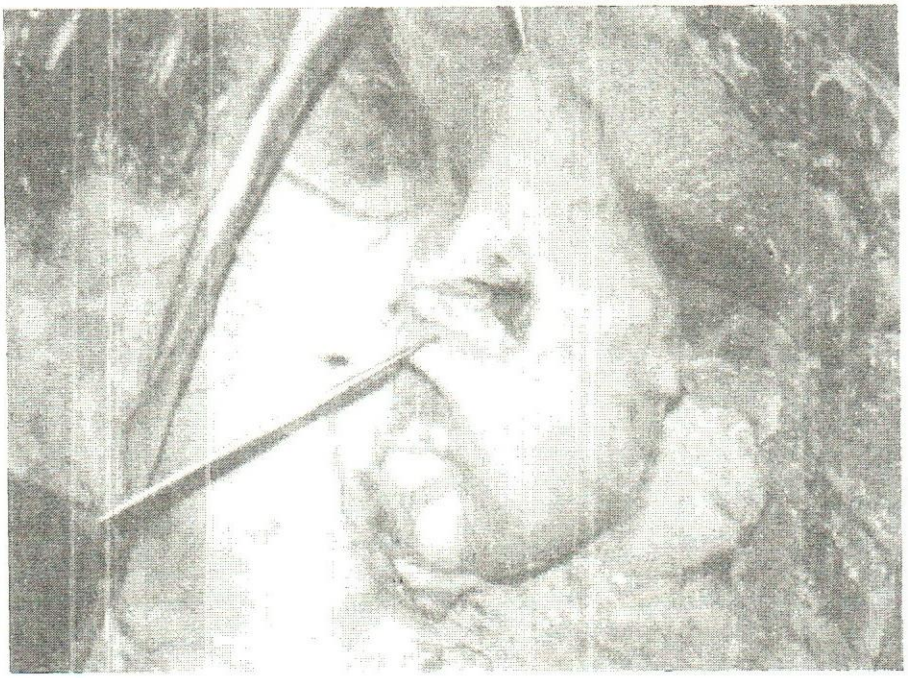

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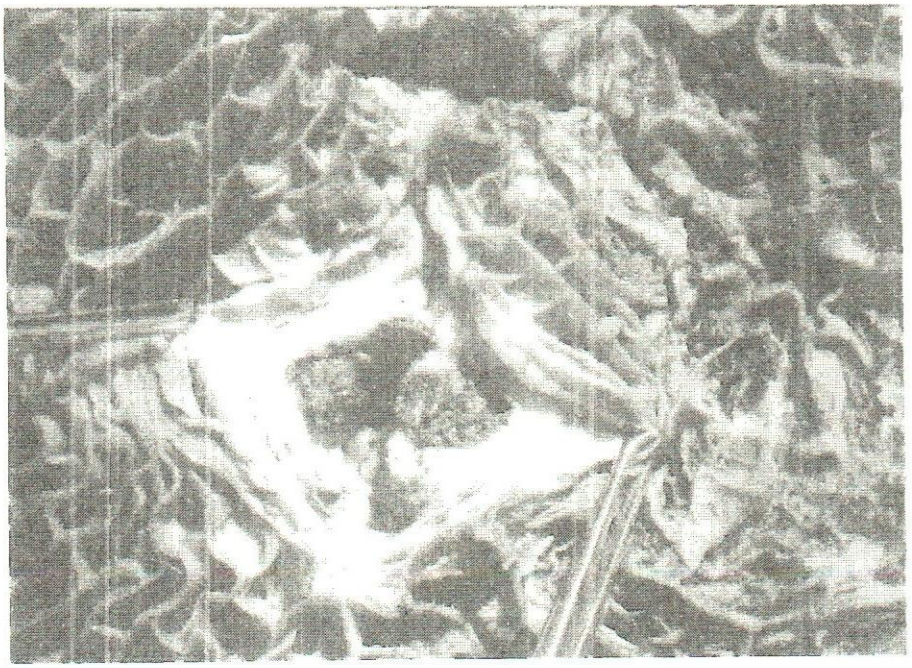

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