Dept. of Surgery,
Faculty Vet. Med., Assiut University,
Head of Dept. Prof. Dr. M.T. Nassef.

CHRONIC PRIMARY SINUSITIS OF THE VENTRAL CONCHAL SINUS IN DONKEY

(With 3 Figs.)

By

F.M. MAKADY

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الإلتهاب الصديدي المزمن للجيب الحلزوني البطني الأنفي في الحمـــار

فتحي مكـــادي

تم في هذا التقرير تشخيص الإلتهاب المزمن للجيب الحلزوني البطني الأنفـــي في حمارين بإستخدام الأشعة السينية . في الحمار الأول تم التشخيص بعد الإستكشـاف الجراحي للجيوب الفكية إتضح خلوها من أي إفرازات ووجود الإفرازات فقط في الجيـب الحلزوني الأنفي ، وفي الحمار الثاني كانت الإفرازات موجودة في الجيوب الفكية وتـم تصريفها ثم تم تشخيص إلتهاب الجيب الحلزوني بعد يومين من الجيوب الفكية ، كذلـك تم علاج الحالتين بنجاح .

Primary paranasal sinusitis with empyema can usually be resolved with sinus lavage (MANSMAMM & WHEAT, 1973; MASON, 1975 and HAYNES, 1984), but when inspissation of the exudate occurs, surgical treatment becomes necessary. Reported here 2 cases of chonic primary sinus empyema that required surgical treatment.

Case 1:

A. 5-year-old, 120 Kg, male donkey was presented because a mucopurulent, foul-smelling discharge from the right nostril had persisted for 3 months. The discharge stopped when penicillin was administered systemically for 5 days, but it resumed 3 days after penicillin was discontinued. A soft tissue density in the area of the right maxillary sinuses was visible radiographically (Fig. 1). Surgical exploration of the right paranasal sinuses was recommended to determine the nature of the mass and the cause of the chronic nasal discharge and penicillin therapy (22,000 U/Kg. IM) was initiated.

Under general anesthesia, the donkey was positioned in left lateral recumbency and the right maxillary sinuses were exposed by a bone flap technique (HAYNES,

1984). The rostral and caudal maxillary sinuses contained no exudate or other abnormality. Penetration of the sagital bony plate beneath the infraorbital canal with a hemostat showed inspissated exudate within the ventral conchal sinus. A portion of the plate was resected. The inspissated exudate was removed with sponge forceps, and the conchal and maxillary sinuses were flushed with saline solution. A second opening into the caudal maxillary sinus was created caudal to the flap with a 1/2 inch trephine. The flap was replaced over the sinuses, and the periosteum and subcutaneous tissue were closed together with simple continuous 2-0 polyglycolic acid suture. The skin was apposed with simple interrupted polypropylene sutures. After recovery from anesthesia a 24 F balloon-tipped catheter was placed within the caudal maxillary sinus through the trephine opening. Gauze sponges were placed over the flap incision and elastic adhesive tape was used to maintain gentle pressure over the area. Penicillin therapy was continued for 4 days. The right paranasal sinuses were irrigated via the balloon-tipped catheter for 3 days with a 1.5% saline Povidone iodine solution. The solution exited through the nasomaxillary opening. Bacterial culture of the exudate removed during surgery yielded no growth. Nasal exudate and odour were absent when the donkey was discharged on day 7. The owners reported first intention healing of the sinus flap, and there has been no recurrence of nasal discharge after 18 months.

Case 2:

A 5-year-old, 135 Kg. male donkey was presented because a mucopurulent, foul-smelling discharge from the right nostril had persisted for 2 months. Treatment with streptopenicid for 6 days immediately before presentation had not changed the volume or character of the discharge. Area of radiopacity filling the right maxillary sinuses was visible radiographically (Fig. 2 A, B).

An opening into the right caudal maxillary sinus was created with a 1/2 inch trephine. Results of cytologic examination of the exudate showed large numbers of rods, cocci, and degenerate neutrophils. A diagnosis of chronic bacterial sinusitis with empyema of the right maxillary sinus was made, and penicillin therapy (22, 000 U/Kg, IM) was initiated pending results of bacterial culture and sensitivity. To evacuate the exudate, a 1/2 inch trephine opening was created in the right frontal sinus. The right paranasal sinuses were irrigated with a 1.5% saline-povidone iodine solution via a 24 F balloon-tipped catheter placed within the caudal maxillary sinus through the trephine opening. radiographs made 2 days later showed a 5X7 cm mass in the right paranasal sinuses dorsal to the roots of the superior fourth and fifth cheek teeth (Fig. 3).

The right maxillary sinuses were exposed by a bone flap technique (HAYNES, 1984). Inspection of the maxillary sinuses showed no exudate or other abnormality. Exposure of the ventral nasal concha by deforming the conchomaxillary aperture

with a finger showed inspissated exudate. After removal of the exudate, the ventral conchal and maxillary sinuses were irrigated with saline. To control hemorrhage that occurred when the conchomaxillary aperture was enlarged, the maxillary sinuses were packed with sterile rolled gauze. Because the area caudal to the maxillary sinus flap was too small for a trephine opening. The end of the gauze was exterorized through the trephine opening in the right frontal sinus. The sinus flap was replaced and sutured in two layers as described previously. The postoperative care was similar to case 1. Cultures of the exudate obtained on initial examination and during surgery were negative. Nasal exudate and odor were absent when the donkey was discharged on day 14. The owners reported first intention healing of the flap, and there was no recurrence of nasal discharge after 18 months.

Primary paranasal empyema results from bacterial infection (usually streptococcal) of the upper respiratory tract (MASON, 1975 and HAYNES, 1984). Although none of these donkeys had history of respiratory disease, the absence of other sinus disease suggests that the sinus empyema probably resulted from an upper respiratory bacterial infection. Penicillin is usually effective against streptococci and is a logical choice for primary sinusitis pending culture and antibiotic sensitivity results.

Inspissated exudate within the ventral conchal sinus should be suspected in cases of primary sinus empyema which are refractory to systemic antibacterial therapy and local lavage. In the present two cases unilateral nasal discharge was the commonest reason for radiography. Radiogrphic identification of a soft tissue density within the sinus over the superior third, fourth, and fifth cheek teeth is an additional indication that inspissated exudate may be present within the ventral conchal sinus. Ventro-dorsal view demonstrated sinus expansion and extension of disease into the nasal cavity. Fluid may obscure radiographic definition of soft tissue densities within a sinus, and removal of the fliud may be necessary to demonstrate them. Narrowing of the nasal passage from distortion of the ventral concha is also evidence of disease within the ventral conchal sinus.

The ventral conchal sinus should be examined if a circumscribed soft tissue density observed on radiogrphs is not apparent during surgical exploration of the maxillary sinuses. The rostral maxillary sinus communicates with the ventral conchalsinus through the conchomaxillary aperture dorsal to the infraorbital canal (HILLMANN, 1975 and nickel et al., 1986). Since the thin bony septum that separates the rostral and caudal maxillary sinuses usually erodes with sepsis of the paranasal sinuses (MANSMANN and WHEAT, 1973), the ventral conchal sinus can become involved in bacterial disease of any of the paranasal sinuses.

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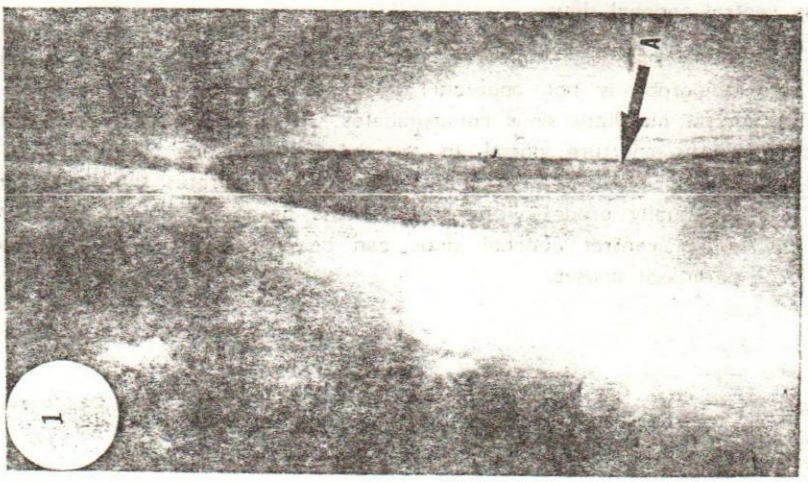
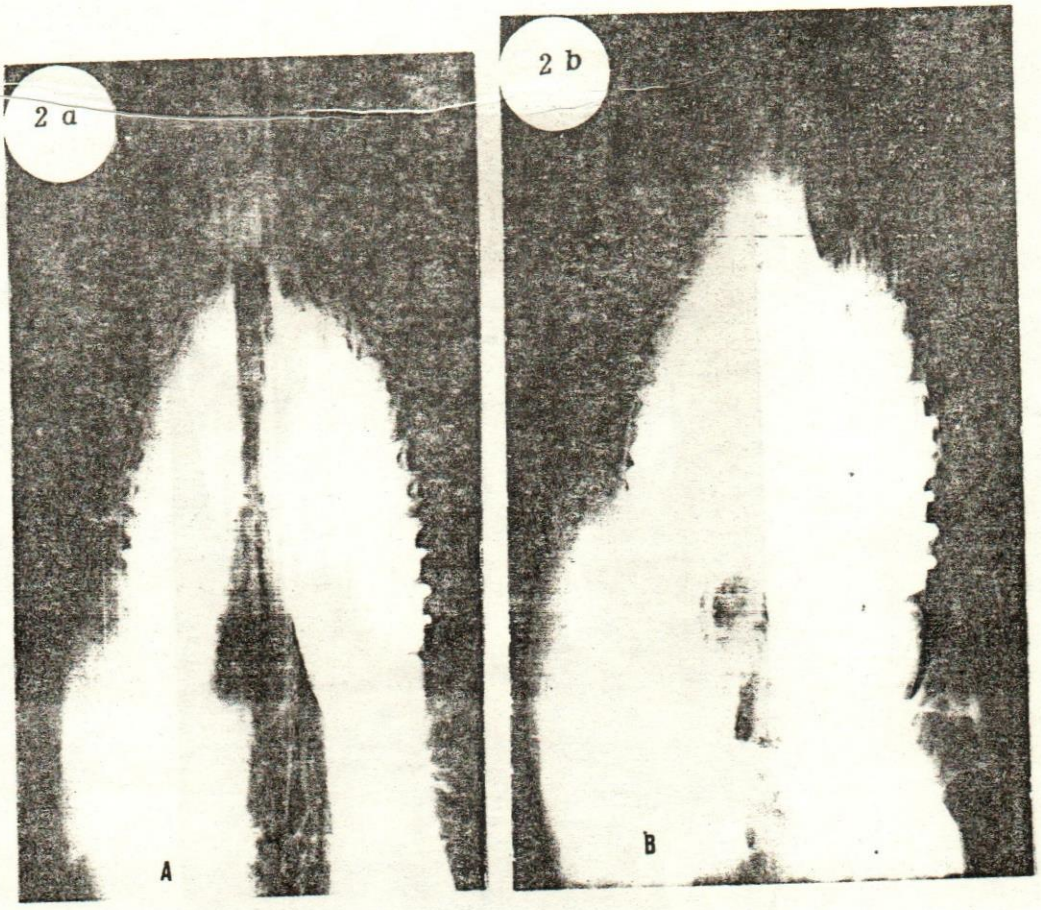
Fig. 1: Case 1. Dorso-ventral radigraph of skull. A. Soft tissue density in the area of the right maxillary sinuses.

Fig. 2: Case 2. Five-year-old donkey. A. Dorso-ventral view. B. Oblique view showing on the right a clearly area of radiopacity filling the maxillary sinus. The sinus is opacified laterally. the septum is markedly deviated.

Fig. 3: Case 2. Lateral radiograph of skull demonstrating a soft tissue mass (arrowed) dorsal to the roots of the superior fourth and fifth cheek teeth.

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