Surgical sinusal disorders include mainly infection and trauma and in less extent congenital and neoplastic disorders. Infectious frontal sinusitis is common and occurs after dehorning; infectious maxillary sinusitis is seldom encountered and usually follows a tooth root abscess. Contamination of the wound originates during the initial trauma or after due to the absence of fly control, especially after dehorning.

Clinical signs are uni- or bilateral nasal discharge associated with a low grade fever. Purulent discharge from the wound is diagnostic (figure 1). Affected animals may show mild anorexia and loss of production. Apprehension during head manipulation may be one precursor sign.

A complete evaluation of the nasal cavities may be performed with an endoscopy. If no draining tract is present, radiography must be performed to assess the bones and sinuses. Both lateral and rostral to caudal views of the frontal sinuses must be performed.

The purpose of surgical management of sinusitis is to re-establish a complete drainage of the purulent exudate. Trephination of the frontal sinus is the most commonly performed surgery. The surgery is performed with the animal standing restrained in a chute, using a light sedation and local anesthesia at the determined sites. Main trephination sites used to effectively drain diverticulums of the frontal sinus are: 1- main part of the frontal sinus (3-4 cm rostral to top of the head, midway between midline and the base of the horn), 2- the post-orbital diverticulum (4 cm caudal to the caudal edge of the orbit above the temporal fossa), 3- rostral site of the frontal sinus (2.5 cm from midline on a perpendicular to midline line passing through the orbit center). After trephination, a copious lavage using warm sterile fluids is started that may be associated with surgical debridement of any inspissated material through the 20mm trephine holes. Alternatively if a more aggressive curettage is necessary, a sinusal flap elevated toward midline may be performed. Non resolution of the drainage may be due to the development of a bone sequestrum. Radiographic re-evaluation is necessary to rule it out. Surgical treatment involved the removal of the sequestrum.

If sinusal infection originates from a tooth root abscess, dental extraction should be done. Good quality radiographies are mandatory to evaluate which tooth/teeth are involved. Considering that the bovine maxillary molar teeth have shorter roots compared to the equine teeth and that the disease is chronic, oral extraction should be attempted first as it is usually successful. Tooth root repulsion through a maxillary sinus trephination can be performed is oral extraction has been ineffective. Trephination of the maxillary sinus and establishment of a lavage...
system should be associated with the tooth extraction. Protection of the alveolar bone with acrylic dental material of plaster of Paris is necessary for the first weeks to prevent contamination.

On rare occasion, Frontal sinus fracture may occur. Conservative treatment is usually successful in absence of contamination of the fracture site. If fracture involved the horn, dehorning is the treatment of choice. In some animals for which horns need to be preserved (e.g.: rodeo bull, longhorns), external coaptation can be attempted.