MANDIBULAR FRACTURES IN CATTLE
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Key points
• Bilateral interdental mandibular fractures in calves are open
• Mandibular fractures in calves are successfully treated with intraoral PMMA stent
• Plating and pinless external fixator can be used to treat mandibular fractures in mature cattle

Fracture of the mandible in cattle is rarely reported. The most frequent presentation is following obstetrical manipulation when a snare is attached to the lower jaw to correct a malposition of the head. In mature cattle, unilateral mandibular branch fracture seems more frequent. Age, location of the fracture and involvement of the molar teeth will influence the choice of treatment and prognosis. Fracture stabilization techniques are well described in equine. However, frequent movement of the jaw during rumination causes serious implants cycling. Interdental wiring only is therefore rarely used.

Mandibular fracture in calves secondary to obstetrical manipulation
Typically, the fracture involved both branches of the mandible in the interdental space. It is open and comminuted. The dental alveoli can be involved in some animals with loss of deciduous teeth. Rarely the symphysis will be fractured. Orthopedic implants are of limited use in calf’s soft bone. Intramedullary pins through each mandibular branches and type II external fixators have been successfully used. However, pins have a tendency to migrate or become lose before fracture healing. Using intraosseous implants may also damage tooth root. Use of PMMA intraoral splinting has the advantage of being placed on the tension surface of the mandible. (figure 1) Because of limited access to the fracture and constant movement of the jaw and tongue, surgical reduction and stabilization is better performed with the animal under general anesthesia. Ayral described the use of a PMMA stent on 13 ruminants (calves, goat, and wapiti). Twelve were discharged from the hospital. Antibiotics were given up to 2 weeks postoperatively. Of those 12, only one had a major complication. Removal of the stent was usually performed at 4 weeks. A large callus, with fistula tracts along the orthopedic wire was constant findings. Long term survival was obtained on 10 animals. According to the owner, the growth rate and production was normal. Three animals had some deformation of the mandible

Mandibular fracture in mature cattle
Fracture of the symphysis and involvement of the molar teeth are more frequently seen in mature cattle. Conservative treatment can be attempted if there is a unilateral non displaced fracture of the mandible. However, constant movement and infiltration of saliva and food from fractured dental alveoli may result in delayed healing with a large callous. DCP plating of the ventrolateral aspect of the mandibular branch provides a stable reduction. (figure 2) Tooth extraction might be necessary during surgery. Use of type I and II external fixators have been used successfully in adult animals. Reif described the use of a AO/ASIF pinless external fixator in 14 cows. The external fixator was left in place for 5 weeks. All treated cattle healed satisfactorily. Sequestrum at the fracture site was diagnosed in 11 cows which were removed
between 5 to 8 weeks after initial stabilization. Six animals were reported to have occlusal abnormalities but they performed well in the herd.

Figure 1a-b-c: Interdental mandibular fracture in a newborn calf

a- Bilateral interdental mandibular open fracture in a newborn calf.  
b- PMMA stent is applied intraorally and secured with orthopedic wires.  
c- Intraoral radiographic view of a bilateral mandibular fracture in a newborn calf.
a-Intraoral radiographic view of a severely displaced symphyseal mandibular fracture on a 16-month-old Holstein heifer.

b-Intraoperative view of a mandibular fracture reduction involving the teeth. A DCP was placed on the ventro lateral aspect of the mandibular branch avoiding the tooth roots.

**Figure 2 a-b**: Two examples of fracture in mature cattle

