

Surgery for the Cattle Practitioner: Nose Ring Torn Out—Nasolabioplastic Operation

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Despite increasing knowledge of the behaviour of our farm livestock, incidents of bulls tearing out their nose ring occur from time to time. Standards of carefulness and vigilance have obviously not increased to the same extent as the level of ethological knowledge. After the event it is not always easy to establish exactly how the rupture of the muzzle happened. In some cases the nose ring might suddenly have got hooked on an awkwardly protruding solid object without anybody noticing, causing the animal to pull at the ring in panic in an attempt to rid itself as quickly as possible of this annoying obstacle. It should be borne in mind that bovines satisfy their curiosity by tactile, olfactory and gustatory means, i.e. with muzzle, nose and tongue, which they are in the habit of "sticking into" anything new and strange. Stepinski (1969) pointed out that nose rings cause injuries when they become rusty and Polkowski (1971) observed that a bull who had been restrained for claw trimming by means of the nose ring, pulled it out. Magda et al. (1965) reported that in the Ukraine bulls are tethered by means of a heavy weight which is attached to the nose ring with a rope; this leads to rupture of the muzzle if the bull gets entangled in his own rope or treads on it. However, the major cause of such injuries in this country as elsewhere is no doubt the custom of tethering male cattle by the nose ring instead of the halter or neck chain, a bad habit which is dying hard. In most of these cases the bull concerned is a younger, apparently still docile animal, who is made to wait "for just a moment" without supervision in a certain place. The slamming of a door, the unexpected appearance of a stranger, another animal or a vehicle, or a piece of paper fluttering in the air is enough to startle the beast tethered there by an unsuspecting attendant; in a panicky attempt to take flight, the muzzle which serves as anchorage for the nose ring, tears right through. In tests to reproduce this incident on the severed heads of older slaughtered cattle by gradually increasing the traction exercised by four men, even their combined strength was not enough to force out the nose ring.

Because of the usually rather "ragged" nature of the wound margins and the contamination and inflammatory swelling which occur immediately following an injury (Fig. 1), also because of the uncertainty over which tissue portions will survive or necrotize, the surgical treatment of a ruptured muzzle, referred to as "nasolabioplasty",

should preferably be postponed until after the defect has been covered by granulation. This has the advantage that cracks and pockets in the wound are obliterated to a large extent (granulation) and that the tags on the edge of the wound which are insufficiently supplied with blood become demarcated (Fig. 2). The process is promoted by offering soft or moistened food and drinking water from a bucket and by daily revision of the muzzle wound: gentle cleaning by sponging with a ball of cotton wool saturated with a mild disinfectant, application of antibiotic udder ointment, and if necessary in the early stages sedation by drugs. During all these manipulations the bull should preferably be controlled by the same familiar attendant who must be strong enough to hold the animal with a firm grasp from underneath, while at the same time quietly talking to the patient. In this way the bull becomes used to these manipulations in the course of the healing process (subsiding of the pain, beginning of a slight itching), which is also important for the post-operative care of the wound.

Ten to 14 days after the original trauma the state of the injury is as a rule much easier to assess from a surgical point of view than on the day of the accident. However, it is advisable not to wait until scarring is completed and to make use of the "growth drive" of the granulation tissue which promotes healing. On the other hand, if surgery is performed prematurely in the days immediately following the rupture of the muzzle, considerable postoperative swelling of the wound margins, pressure necroses and purulent complications may occur, as was emphasised by Lipińska and Krzyżanowski (1961), Fomenko (1965), Magda et al. (1965) and Polkowski (1971).

The operation itself is performed on the sedated animal* which has been restrained in the lateral recumbent position and whose head—except for muzzle, nostrils and lower lip—is covered with a drape. For local anaesthesia (Fig. 3) 10 to 20 ml of a local anaesthetic is injected bilaterally (into the infraorbital foramen two fingers above the first maxillary molar tooth = P₂ (= conduction anaesthesia of the infraorbital nerve), and both depots are gently massaged. Alternatively, the muzzle must be sprayed around its circumference along the border with the hairy skin, because the tissue of the wound margins themselves is usually too tight for infiltration.

*Rompun/Combelen = Registered trademarks of Bayer AG, Leverkusen.

Fig. 1. Recent rupture of the muzzle (a few days old) caused by tearing out of the nose ring; the wound is ragged, contaminated and swollen, i.e. at this stage unsuitable for a nasolabioplastic operation.

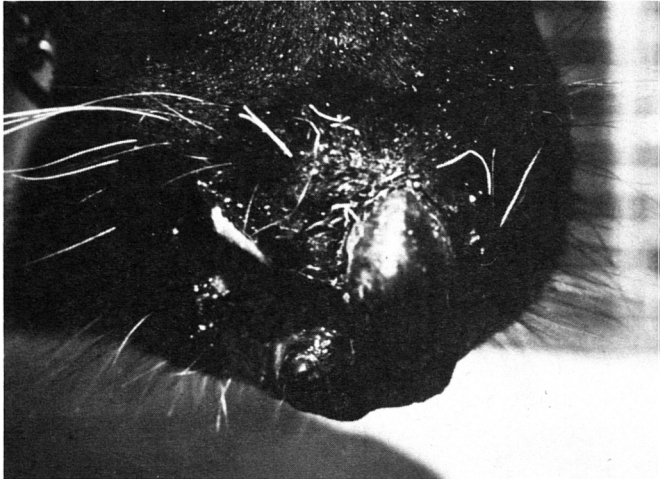


Fig. 2 Muzzle tear with clean granulation (approx. 2 weeks after the injury occurred) with favourable prospects for surgery.

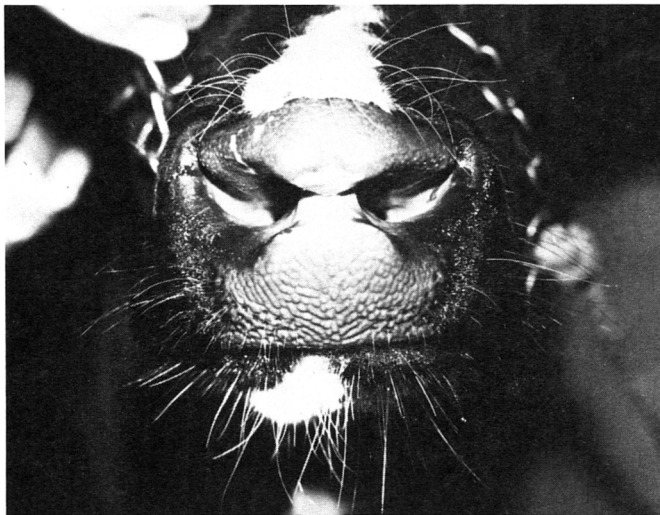
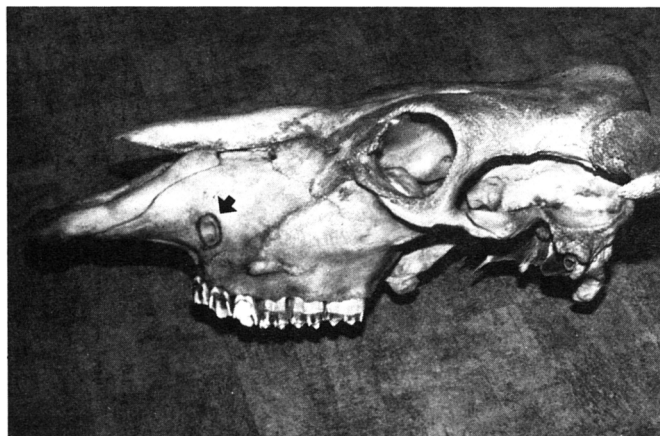


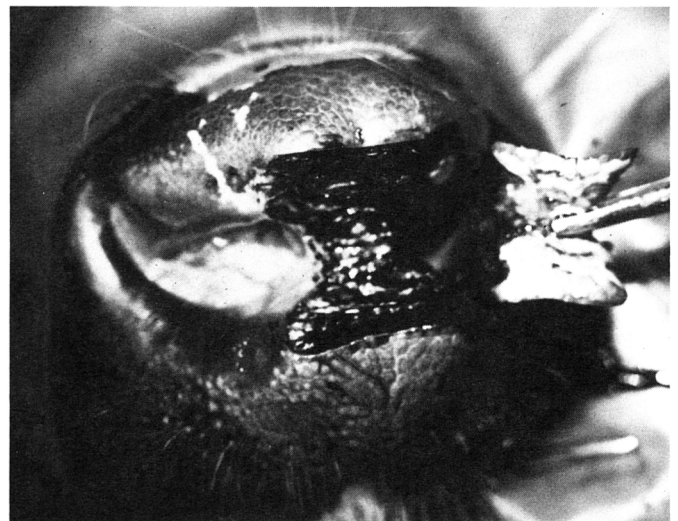
Fig. 3 Position of the infraorbital foramen (arrow) on the cranium of the patient.



After thorough cleansing of the granulating defect, of the muzzle surface and of both nostrils, the nostril that lies uppermost is blocked with some cotton wool for the duration of the operation in order to prevent leakage of nasal secretion into the wound. Subsequently a thin slice is cut away from the granulation and scar tissue of both wound margins with a sharp scalpel in such a way that the two thus generated trapeze-shaped wound surfaces (Fig. 4) fit well together in size and shape (test approximation). Suitable suture materials are synthetic threads, chromic catgut (size 8 to 10) or silk (No. 18a). The implantation of a plastic net or sieve recommended by Fomenko (1965) and Magda et al. (1965) can in our opinion be dispensed with. It is important to use a strong, curved tacking needle, a packing needle or a thin Gerlach needle.

As recommended in the literature, individual sutures should preferably be inserted in the form of a "double U" beginning inside the nostrils beside the nasal septum; only then is the muzzle sutured externally, with two or three double-U stitches—as appropriate for the size of the muzzle. After each suture the thread should be tightened to test whether a good approximation of the wound edges has been achieved. If necessary one half of the suture (= one "U") will have to be removed and reinserted to achieve the cosmetically desired result. The "free" portion of each suture which lies outside on the mucous membrane of the muzzle (i.e. the bend of each "U" shape) should preferably be guided through a piece of elastic PVC tubing (or as plastic tube) of 2 to 3 mm diameter which has been trimmed to the appropriate length. This padding will prevent (or at least delay) any pressure necrosis in the region of the "U" bend due to tightening of the stitches or swelling of the wound, while at the same time protecting this part of the sutures from the constant "curiosity" of the patient's rough tongue, which is particularly important if catgut is used.

Fig. 4. Regeneration of the wound surface.



The pieces of tubing also permit antibiotic dressing of the sutures with the thin nipple end of udder ointment tubes without the risk of the ointment placed into the tubing being licked off immediately after application (Fig. 5).

During the healing process of 8 to 10 days the muzzle and the orifices of the nostrils should be carefully and gently cleaned every day and dressed with fresh antibiotic ointment. Care should be taken that the patient is tethered singly, receives soft food and is offered the drinking bucket regularly.

After 8 to 10 days the sutures should be removed (Fig. 6). The puncture canals which tend to be slightly infected at this stage, and any residual defects of the wound will then granulate rapidly. If, contrary to expectations, no wound healing has occurred, there is no objection to a second operation—after a clean granulation has again been induced.

Fig. 5. Nasolabioplasty with "double-U sutures," which were padded with pieces of PVC tubing; this facilitates antibiotic dressing of the wound including those parts of the suture lying inside the tubing.



The new nose ring should not be fitted until a further four to six weeks have elapsed (Fig. 7).

If the owner does not consent to surgery, the only alternative is the clumsy insertion of the new nose ring more or less at an angle through the trunk-like upper process of the defective muzzle. We would like to warn against fitting the ring further back, i.e. through the cartilaginous portion of the nasal septum, because practical experience has shown (anonymous communication, 1986) that this tends to make the bull in question completely intractable.

Stockbreeders and personnel should be instructed on every suitable occasion on how to prevent the tearing out of nose rings (by using rustproof rings, removing protruding hooks from the environment, refraining from using the nose ring for tethering and pulling); it should also be pointed out to them that a complication of infected muzzle injuries

Fig. 6. Condition 10 days after the operation: double-U sutures removed; rupture line and puncture canals are still recognizable.

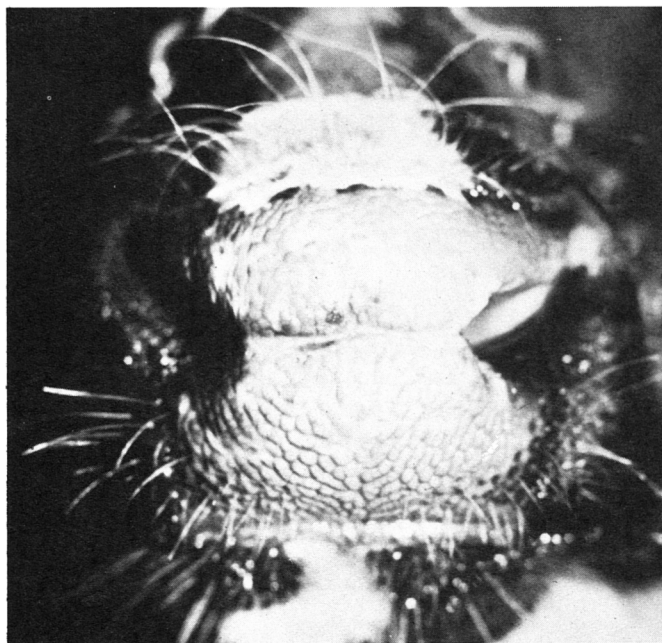
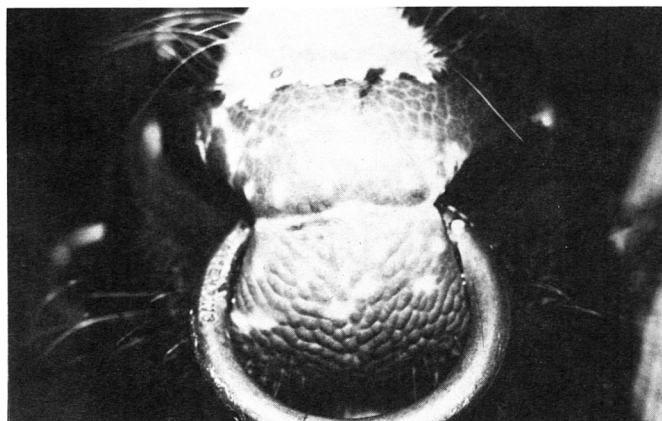


Fig. 7. Condition 8 weeks after the intervention; a new nose ring has been fitted.



can be the development of abscesses at the base of the brain, i.e. an incurable disease of the central nervous system (Stöber, 1984).

References

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