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Treatment of penile prolapse in horses using a modified Bühner suture technique

J. E. AURICH, C. AURICH

PROLAPSE of the penis in horses can be caused by trauma, tranquillisers, neurological disorders and severe debilitation (Pearson and Weaver 1978, Simmons and others 1985). The condition rapidly progresses to paraphimosis, an inability to retract the penis into the prepuce. The treatment of choice is to reposition the penis into the prepuce and temporarily close the external preputial orifice (Perrin 1994, Nie and Pope 1997). If the penis is not permanently damaged or paralysed, the prognosis is generally good. If the penis cannot be repositioned, suspensory devices that hold the penis closely beneath the preputial orifice, partial amputation or irreversible fixation within the prepuce has been suggested (Perkins and Frazer 1994). This short communication describes the temporary partial closure of the prepuce after repositioning of the prolapsed penis, using a modification of the Bühner (1958) technique for treatment of uterine prolapse in cattle.

Five horses with penile prolapse and paraphimosis were referred to the authors' clinic (Table 1). In two cases the prolapse had been treated unsuccessfully with suspensory devices. In all five horses the penis was markedly swollen. Urination was not obstructed. One animal had slight ataxia; the musculature of the hindquarters appeared to be reduced, and a tentative diagnosis of prolapse due to disturbed innervation of the penis was made.

In all cases the penis was repositioned into the prepuce and the preputial orifice was closed partially using a Bühner suture while the horse was sedated and standing. The Bühner suture (Hauptner) is a braided, 7 mm wide synthetic tape. The horses were sedated intravenously with 5 to 8 mg detomidine hydrochloride (Domosedan; Pfizer-Austria) and 10 to 15 mg butorphanol (Butomidor; Richter-Pharma). To reduce penile oedema in four cases, an elastic bandage was tightly wrapped around the penis, beginning at the glans penis, and left in place for 10 minutes. After two to three turns of the bandage had been removed, the exposed part of the penis was

repositioned until the whole organ had been placed back in an intrapreputial position. In all five cases, the penis could be repositioned completely. In two cases, the prepuce was closed temporarily with towel clamps before insertion of the suture.

For the Bühner suture, four skin incisions were made, 2 cm lateral to the ventral midline and 2 cm cranial and caudal to the preputial orifice (Fig 1). A Bühner needle (Aesculap) was introduced through one caudal incision and advanced subcutaneously to the ipsilateral cranial incision. The suture was passed through the opening of the needle tip and the needle was pulled backwards through the caudal incision. The procedure was repeated on the other side. The suture was then pulled tight, reducing the preputial opening to two to three fingers' width (Fig 2). The horses received 7 mg/kg gentamicin (Gentavan; Vana), administered intravenously once daily, 20,000 to 30,000 iu/kg penicillin (Serocillin; Richter-Pharma), administered intravenously four times daily, or 5 mg/kg enrofloxacin (Baytril; Bayer), administered orally once daily for eight to 10 days, 1.1 mg/kg flunixin meglumine (Finadyne; Essex), administered intravenously twice daily for three days (for eight days in horse 3), and tetanus antiserum (Equilis tetanus serum; Intervet). Cold water hydrotherapy was applied for 10 minutes four to six times daily, and the horses were hand-walked four to six times daily.

Following the procedure, oedema of the penis and prepuce decreased markedly. In case 1, the position of the penis in the prepuce had to be corrected the day after the procedure to enable the animal to urinate; thereafter, no problems occurred. When the suture was removed, four animals (cases 1, 2, 4 and 5) were able to hold the penis within the prepuce normally. In case 2, on release only one-third of the penis could be everted. Eight months later, the horse showed an undisturbed erection, emission and ejaculation. In case 3, because of movements of the animal during the procedure, the distance between the craniolateral incisions was larger than intended (approximately 10 cm). On the day after the procedure, the suture was replaced by a new one that achieved better closure of the prepuce. Although the oedema resolved in this case, the prolapse recurred whenever the suture was opened. On day 11, the horse was euthanased. Histopathology revealed ganglioneuritis of the cauda equina.

Prolapse of the penis in horses required immediate veterinary attention. In these five horses the Bühner suture maintained the penis within the prepuce and allowed penile

TABLE 1: Case descriptions of five male horses with prolapse of the penis and paraphimosis treated by placement of a Bühner suture

Case	Breed	Age and sex	Aetiology of prolapse	Time until referral	Treatment before referral	Number of days suture was left in place	Outcome
1	Noriker draught	30 months; stallion	Trauma (kicked by a mare)	4 hours	None	6	Cured and released to owner
2	Quarter horse	2 years; stallion	Trauma (kicked by a mare during an unintended breeding attempt)	5 hours	None	12	On release to owner only one-third of penis could be everted; 8 months later, normal erection and ejaculation Euthanased
3	Warmblood	24 years; stallion	Ganglioneuritis of cauda equina	24 hours	Furosemide, topical antibiotics	11	Euthanased
4	Warmblood	13 years; gelding	Trauma (kicked by another horse on pasture)	48 hours	Suspensory device antibiotics, flunixin meglumine, corticosteroids	7	Cured and released to owner
5	Welsh pony	20 years; stallion	Debilitation and old age	4 days	Suspensory device antibiotics, flunixin meglumine, corticosteroids	6	Cured and released to owner

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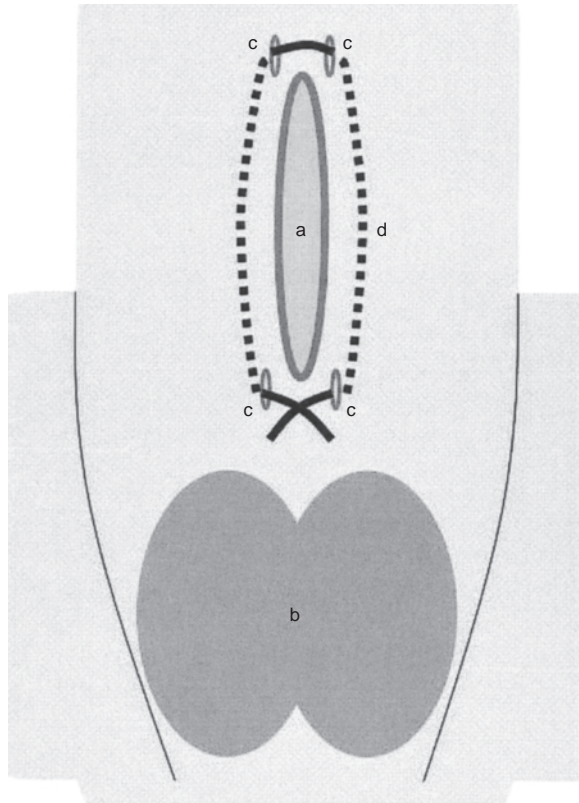


FIG 1: Schematic presentation of the Bühner suture technique used to treat five horses with penile prolapse and paraphimosis. a Preputial orifice, b Testes, c Skin incisions, d Path of suture

oedema to resolve. The technique requires only four incisions, which is an advantage when the procedure is done in the standing horse. In addition, the risk of infection via multiple incisions is minimised. The heavy material of the suture



FIG 2: Bühner suture in placed and closed in a stallion with penile prolapse (case 2)

withstands substantial tension without tearing through the surrounding tissue. Only the stallion with ganglioneuritis (case 3) did not regain the ability to keep the penis in its normal position, and was eventually euthanased. The Bühner technique can thus be recommended for the treatment of traumatic prolapse of the penis in horses.

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