

Devil's claw (*Harpagophytum procumbens*) in a Brahman's preputial sheath: a case report from Botswana

J F W Isa^a, S R Magembe^b and T W Naudé^c

ABSTRACT

Failure of penile protrusion during attempted service of a cow on heat was investigated in a 3-year-old Brahman bull at Kwakwadi cattle-post in the Kgalahadi sandveld, Kweneng District, Botswana. The investigation revealed that penile protrusion was obstructed by a devil's claw (grapple thorn), a dry fruit of the plant *Harpagophytum procumbens*, which had lodged in the *cavum preputiale*. The thorn, which was removed almost completely manually with minimal tissue dissection, had also caused minor lacerations and puncture wounds on the *lamina interna pars parietalis*. The wounds healed well following treatment with antiseptics and antibiotics and subsequently the bull regained full penile protrusion and served the cows well. This report describes the first case of lodgement of a devil's claw fruit in, and its extraction from, the *cavum preputiale* of a Brahman.

Key words: Brahman, devil's claw, grapple thorn, *Harpagophytum procumbens*, preputial obstruction.

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INTRODUCTION

Foreign bodies are frequently encountered in cattle, usually in the rumen and reticulum, and occasionally in the retro-pharynx, oesophagus and abomasum. Occurrence of foreign bodies elsewhere, such as a wooden stake in the heart of a cow¹, and grass awns in the eye of a steer⁹ are extremely rare. The incidence of preputial disorders associated with foreign bodies is even rarer. In 1989, however, it was reported that splinter wood containing a bent nail at one end was extracted from the preputial cavity of a 4-year old Shorthorn bull¹⁰, and in 1974 a broken bamboo handle of a *paori* (an appliance used to remove dung) was removed from the prepuce of a Hariana bullock⁶. O'Connor, quoted by Misra and Angelo⁶, recorded an incident in which a grass stem had gained entrance into the sheath of a bull.

HISTORY

In early August 1993, at Kwakwadi cattle-post in the Kgalagadi sandveld, Kweneng District, Botswana (2424 BB), a

Brahman bull was seen by the owner frantically mounting a cow. However, the attempts were unsuccessful as there was no penile protrusion. Instead a dark object was seen lodged in the *cavum preputiale*. The matter was brought to our attention a week later.

CLINICAL EXAMINATION, DIAGNOSIS AND TREATMENT

The Brahman bull, about 3 years old, was afebrile. Its *ostium preputiale* was

inverted and the entire distal *preputium* swollen, and on gentle palpation it was tender and painful. After premedication with atropine sulphate (Atropine 0.5 % injection, Centaur Labs), the bull was sedated with xylazine (Rompun, Bayer). The *preputium* was shaved, scrubbed and disinfected. On deep palpation of the *cavum preputiale* a hard lump was felt just proximal to the site of preputial inversion, and on digital exploration inside the *cavum preputiale* a hard foreign object that could not be dislodged was encountered.

Uterine forceps were inserted through the inverted *ostium preputiale* and the foreign body grasped and gently pulled. Under traction the *lamina interna pars parietalis* everted and completely extruded the foreign body. It turned out to be the dried fruit of a devil's claw plant (Fig. 1). Lodged about 70 mm from the preputial orifice, the fruit had anchored firmly into the *lamina interna pars parietalis* which was slightly twisted, partially obstructing the *ostium preputiale*.

Using bone-cutting forceps, the body of the devil's claw was set free by severing the tentacles at their bases. Then, working on each tentacle at a time, the claws were dislodged manually and, where necessary, by minimum tissue dissection of the *lamina interna pars parietalis*. At points of



Fig. 1: A grapple thorn fruit. Two of the 4 rows of arms with recurved spines are clearly visible. The fruit involved measured c. 60 mm between the outermost recurved spines.

^aFaculty of Agriculture, Botswana College of Agriculture, Private Bag 0027, Gaborone, Botswana.

^bDepartment of Animal Health and Production, PO Box 10019, Gaborone, Botswana.

^cDepartment of Pharmacology and Toxicology, Faculty of Veterinary Science, University of Pretoria, Private Bag X04, Onderstepoort, 0100 South Africa.

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anchorage of the claws, old puncture and laceration wounds were found on the *lamina interna pars parietalis* around which mild fibrosis and suppuration were present. The penis was exposed and inspected: it was free of traumatic injuries.

The *cavum preputiale* was irrigated with tepid water containing chlorhexidine and cetrimide (Savlon, ICI) and the wounds dressed topically with oxytetracycline hydrochloride wound powder (Terramycin, Pfizer). This was followed by injection of long-acting oxytetracycline hydrochloride (Terramycin LA, Pfizer) which was repeated on Day 4. The bull recovered and complete penile erection and protrusion was obtained by electroejaculation on the Day 4 and Day 14 after removal of the barbed fruit.

Sun-dried, the reassembled grapple thorn fruit weighed *c.* 2.83 g and measured *c.* 61 × 55 × 30 mm.

DISCUSSION

Devil's claw (*sengaparile* in Setswana) occurs widely in Botswana, with highest density in the Kgalagadi sandveld⁷. It is a prostrate perennial herb with narrowly ovate pinnatifid leaves and purplish tubular flowers. Its fruit (Fig. 1) has 4 rows of curved arms bearing recurved spines, the length of the longest arm 2–5 times the length of capsule proper⁸. The dry grapple thorn fruit is very light and can be blown by wind some distance over the ground or grass. Numerous grapple thorns were found scattered on the ground, in clusters in some areas and sparsely in others, in the area where the animals were grazed. One grapple thorn was found suspended on grass about 500 mm off the ground.

In some Brahman bulls, the *ostium preputiale* has remarkably small ground clearance, and the *lamina interna pars parietalis* has a tendency to evert not only when the animals are lying or standing but also during locomotion³. It is presumed that the *lamina interna pars parietalis* everted when the bull was either lying down or grazing and came into contact with the claws of the grapple thorn. In response to the prickling of the claws, the *lamina interna pars parietalis* recoiled and carried the grapple thorn

with it deeper into the *cavum preputiale*. The grapple thorn is a spinigerous fruit which, after lodging or attaching, remains *in situ* with great tenacity, and is known to be a menace to the feet and jaws of wild animals and livestock⁵. Subsequent to the grapple thorn lodging in the *cavum preputiale*, it was a constant irritation and could have led to increasing prolapse², but this was prevented by the clawed tentacles, which had fixed the *lamina interna pars parietalis* and restricted prolapse.

The presence of the grapple thorn in the *cavum preputiale* could easily have been overlooked owing to the absence of lesions on the *lamina externa* (the visible external prepuce). The differential diagnosis of preputial disease should include foreign bodies whether or not they are associated with visible entry or exit preputial lesions¹⁰. This is even more imperative for a breed such as the Brahman, a *Bos indicus* breed with a predisposition to preputial eversion and small ground clearance² leading to traumatic injuries and infection^{2,4}.

Foreign bodies in the *cavum preputiale* may spur posthitis and balanoposthitis attended by oliguria or ischuria⁶. Oliguria was present in both the Hariana and Shorthorn bull^{6,10} due initially to mechanical blockage of the *cavum preputiale* by the foreign bodies involved, and subsequently exacerbated by acute posthitis and balanoposthitis. In the present case, such complications were absent because the mechanical blockage of the *cavum preputiale* by the grapple thorn was only partial, allowing urine to be voided unhampered.

The grapple thorn did not injure the penis because the sharp points of the claws curve backwards behind the distal end of the tentacles. Consequently, the claws hooked into and remained embedded *in situ* in the *lamina interna pars parietalis* and were not pointing into the *cavum preputiale*. Secondly, the attachment of various hooks (twisting action) of the grapple thorn resulted in the formation of folds on the *lamina interna pars parietalis* distal and proximal to it. This contributed to the partial obliteration of the *cavum preputiale*. The combined effect was that during attempted protrusion

the penis could not impinge upon the sharp recurved spines of the claws of the grapple thorn and was, therefore, not damaged.

Complete penile erection and protrusion were obtained after treatment. It can be concluded that the injuries inflicted on the *lamina interna pars parietalis* by the grapple thorn were not sufficiently severe to cause preputial stenosis¹¹ or deviation of the penis, which could have interfered with proper penile erection and service.

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REFERENCES

1. Anderson B C 1983 A believe-it-or-not foreign body (wooden stake) in the heart of a cow. *Veterinary Medicine and Small Animal Clinician* 78: 109
2. Donaldson J E, Aubrey J N 1960 Posthitis and prolapse of the prepuce in cattle. *Australian Veterinary Journal* 36: 380
3. Hofmeyr C F B 1968 The surgery of bovine impotentia coeundi. *Journal of the South African Veterinary Medical Association* 39: 93–101
4. Laniard A A 1956 Surgical conditions affecting the reproductive tract of the bull. *Journal of the American Veterinary Medical Association* 129: 506
5. Letty C 1962 *Wild flowers of the Transvaal*. Trustees, Wild Flowers of the Transvaal Book Fund
6. Misra S S, Angelo S J 1974 An unusual foreign body in the prepuce of a Hariana bull. *Uttar Pradesh Veterinary Journal* 2: 35–37
7. Moss H 1982 *The potential for commercial utilization of veld products*. Plan No. 7/1/14/80-81. Government Printer, Botswana
8. Retief E, Herman P P J 1997 *Strelitzia 6. Plants of the northern provinces of South Africa: keys and diagnostic features*. National Botanical Institute, Pretoria
9. Shechter B, Brognon J D, McLaughlin S A 1985 Herbaceous (grass awn) ocular foreign body in a steer. *Agricultural Practice* 6, 24: 28–29
10. Van Suan R J, Ciszewski D K 1989 Preputial foreign body in a bull. *Journal of the American Veterinary Medical Association* 194: 103–104
11. Zemjanis R 1962 *Diagnostic and therapeutic techniques in animal reproduction*. The Williams and Wilkins Company, Baltimore