

CONTRIBUTION ON ANO-RECTAL AFFECTIONS IN FARM ANIMALS

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SUMMARY

Fifty one animals of different species suffering ano-rectal affections (12 cattle, 3 buffalo, 21 sheep and 15 equine) were admitted to the Surgery Clinic, Faculty of Veterinary Medicine, Zagazig University, during a four year period (1995-1999). Diagnosis of different affections was carried out through history, clinical and histopathological examinations. The diagnosed affections were common cloaca, atresia ani, atresia ani et recti, atresia ani with tailessness, atresia ani with rectovaginal fistula, complicated atresia ani, rectal prolapse, rectal tearing and perianal tumours.

The high number of congenital affections was recorded in sheep followed by calves while the high number of acquired affections was recorded in donkeys. Uncommon affections as common cloaca in calves, and sarcoid and hemangiosarcoma as perianal tumours were recorded in this study.

All the affected animals were surgically dealt with successfully except perianal melanoma in equine (2 cases) where surgery was precluded.

INTRODUCTON

Malformations of the rectum and anus were the most commonly recorded anomalies of the intestinal tract in domestic animals where it is most common in sheep, goats, pigs and calves; rare in foals (Frank 1981; O'Connor 1982; Fouad et al., 1985; Singh et al., 1989; Abdel-Aal et al., 1992 and abdel-Wahed 2000). Imperforate anus may appear as a single defect or may be accompanied with other anomalies as atresia recti or coli, persistent cloaca, absence of a kidney, renal hypoplasia and dysplasia, absence of tail, musculoskeletal deformities or other anomalies (Keller and Horney 1985; Baker 1987; Dreyfuss and Tulleners 1989 and Martens et al., 1995).

Rectal prolapse and rectal tears were the common recorded acquired affections met with in all domestic animal species (Turner and Fessler 1980; Stauffer 1981; O'Connor 1982; Horney and Wallace 1984; Hofmeyr 1988; Kassem 1991; Freeman and Martin 1992 and El-Seddawy 1996).

The recorded neoplasms of the perianal region, anus and rectal mucosa in equine are squamous cell carcinomas, melanomas and polyps (Vaughan 1984) while in ruminants, perianal papillomata were recorded (Nassef et al., 1986 and Hofmeyr, 1988).

The present study aimed to record some common and uncommon anorectal affections in farm animals either congenital or acquired with reference to their surgical management.

MATERIALS AND METHODS

This work was conducted on 51 affected cases referred to the Surgery Clinic, Department of Surgery, Faculty of Veterinary Medicine, Zagazig University within a four year period (1995-1999).

On admission of these cases to the clinic, diagnosis of different affections was carried out through the history and clinical examination. Diagnosis was obvious in presence of anorectal malformations. However, abdominal pressure was used to differentiate between atresia ani and atresia ani et recti.

In case of atresia ani with rectovaginal fistula, the presence of fistula was ascertained through the history and vaginal exploration digitally. Atresia ani accompanied with owners interference and acquired cases of anorectal affections were diagnosed through the history and clinical signs present. Biopsies from perianal tumours were preserved in 10% neutral buffer formalin for histopathological examination.

For treating the affected cases the following procedures were performed:

Anaesthesia :

Caudal epidural anaesthesia using lidocaine 2% (Xylocaine, Astrasodertalje, Sweden) was used in most cases. Local infiltration anaesthesia with the same drug was used in some cases as atresia ani.

Surgical interference :

In case of Common cloaca and after the area was prepared, a midline incision is performed ventrodorsally through the skin of the distended swelling changed to a circular incision against the seat of the anal opening. The disc of skin and subcutis was excised and the blind ends of the rectum and vagina were mobilized caudally and fixed to the subcutis with non-penetrating sutures using chromic catgut No. 1. Then the rectum was opened by removal of a disc of its blind end and the mucosa was fixed to the skin with simple interrupted suture using silk No. 2.

The mucous membrane against the created vulvar lips was incised dorsoventrally to its end and each side was sutured to the skin with simple interrupted suture pattern with silk No. 2. The roof of the vagina and the ventral wall of the rectum were then reconstructed separately, from the lining mucous membrane, to their level to the skin surface using catgut No. 0 and inverting type suture (Fig. 1).

Cases of atresia ani were treated using the routine technique described by O'Connor (1981). In case of atresia ani et recti, the rectum was dissected

free then moved caudally. The rectal mucosa was fixed to the subcutaneous perianal tissue with four non penetrating catgut No. 1 sutures and the procedure was completed as in case of atresia ani (Fig. 2). Atresia ani with owners interference were dealt with through reconstruction of the anal opening through its normal position or its widening (Fig. 3).

In case of atresia ani with rectovaginal fistula, the anal opening was firstly made patent, then the



Fig. (1a): A native breed female calf affected with atresia of the anus and vulva (common cloaca).



Fig. (2a): Atresia ani et recti in a native breed female calf



Fig. (1b): The animal after reconstruction of anal opening and vulvar lips.



Fig. (2b): The animal after reconstruction of rectum.



Fig. (3a) Malinterference in a case of atresia ani with stenosis of anal opening in a buffalo calf.



Fig. (3b) Case of fig. 3d after correction.

fistula was repaired through a cutaneous horizontal incision between the vulva and anus as described by Hofmeyr (1988) (Fig. 4).

Mucosal prolapse of the rectum and recent complete one were corrected through repelling of the prolapsed part, after its irrigation with warm antiseptic solution, and application of a purse-string suture. Old standing cases of complete rectal prolapse accompanied with necrosis of the muco-

sa was treated through modified submucosal resection described by Turner and Fessler (1980). Recent third degree rectal tearing was interfered with directly as an emergency case and was corrected through suturing of the rectal and vaginal wall by 6 bite interrupted mattress suture using vicryl No. 2 after Hudson (1972), where a half circle needle was used and starting from within the vagina, the needle was inserted deeply through the left vaginal flap followed by the left rectal



Fig. (4a) She-donkey with atresia ani and rectovaginal fistula.



Fig. (4b) The animal after reconstruction of anal opening.

flap emerging in the submucosa, then the right rectal flap entering at the submucosa, the right vaginal flap entering the vagina then a shallow bite in the right vaginal flap and lastly a shallow bite in the left vaginal flap and the suture was tightened with a hand-tied surgeons knot through the vaginal lumen.

Postoperative care :

Liquid parafin was given orally and as enemas for the operated animals in addition to a laxitive diet for at least 10 days. A systemic course of broad spectrum antibiotic for 3 successive days was given for all operated animals together with a prophylactic dose of antitetanic serum in equine and ovine cases. A broad anthelmintic was given also for cases of rectal prolapse and pursestring

suture applied was removed 72 hours postoperatively.

RESULTS

Common cloaca (atresia of the anus and vulva) was recorded in two native breed calves. Atresia ani was also of the recorded anorectal malformations in this study. The high number of cases of this affection was in lambs (21 cases) either alone or accompanied with rectovaginal fistula (Table,1). Atresia ani accompanied with taillessness (anury) and atresia ani et recti were recorded in 3 native breed calves.

Animals affected with atresia ani, atresia ani et recti or common cloaca had a history of normal

Table (1) : Showing the type of anorectal affection and number of affected animals.

Affection \ Animal	Cattle	Buffalo	Sheep	Donkey	Mule	Mare	Total
Congenital							
Common cloaca	2	-	-	-	-	-	2
Atresia ani	-	-	14	-	-	-	14
Atresia ani et recti	2	-	-	-	-	-	2
Atresia ani with rectovaginal fistula	1	1	7	1	-	-	10
Atresia ani with taillessness	1	-	-	-	-	-	1
Atresia ani with malinterference	2	1	-	-	-	-	3
Acquired							
Rectal prolapse	-	1	-	10	1	-	12
Rectal tearing	2	-	-	-	-	-	2
Perianal tumours	2	-	-	1	1	1	5
Total	12	3	21	12	2	1	51

sucking firstly but poorly later. There was a variable decrease in appetite and signs of colic and depression appeared within 24 hours if the atresia was not discovered. The clinical examination of these cases revealed a distended abdomen, absence of the anal opening with bulging of the anal area on abdominal palpation, a sign that was not noticed in case of atresia ani et recti. The common cloaca was characterized by presence of a large sac at the seat of the anus and vulva (Figs 1 & 5).

The direct reconstruction of the anal opening gave

good results for these cases together with reconstruction of the vulva in cases of common cloaca (Figs 1,2 & 5). Atresia ani with rectovaginal fistula was recorded in this study in 10 animals (Table 1). The high number of this affection was recorded in lambs (7 cases). A rare case was recorded in a she donkey of 1.5 years old (Fig. 4). The diagnosis of these cases was carried out through the history of defecation through the vulva and presence of the fistula was detected through digital exploration (Fig. 6). The affected animals did not show any other marked clinical symptoms. Malinterference by the owner in case of atresia ani was recorded in 3 cases (2 native breed calves

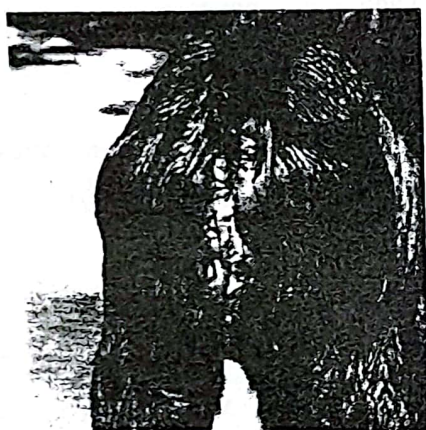


Fig. (5a) The same case of Fig. 1 at removal of stitches.



Fig. (5b) Another case of common cloaca in a native breed calf.



Fig. (6a) Atresia ani with rectovaginal fistula in a lamb.



Fig. (6b) Atresia ani with rectovaginal fistula in a native breed calf.

and a buffalo calf) (Fig. 3). The three animals suffered stenosis of the induced opening and difficulty in defecation accompanied with digestive troubles. Correction of the position of the anal opening and widening of the induced opening was performed in these cases (Fig. 3).

Acquired anorectal affections as rectal prolapse, rectal tearing and perianal tumours were recorded (Table 1). Two types of rectal prolapse were recorded in this study, mucosal and complete. Recent mucosal prolapse was seen as a circular rosy red swelling at the anus (Fig. 7a) lacerations of the prolapsed mucosa was seen in old standing cases (Fig. 7b).



Fig. (7a) Recent mucosal prolapse in a donkey.

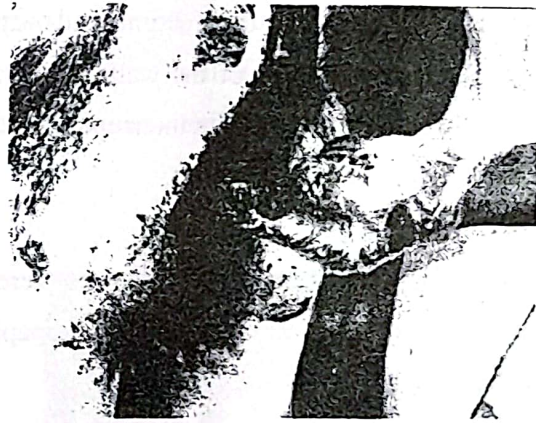


Fig. (7b) Old mucosal prolapse in a donkey.

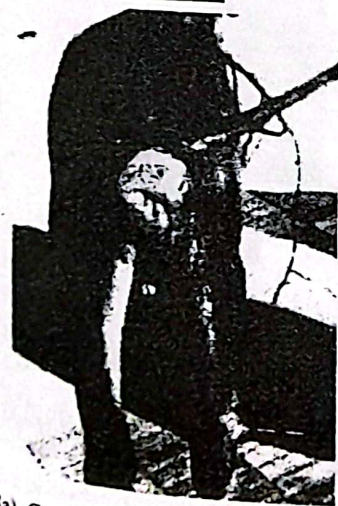


Fig. (8a) Complete recent rectal prolapse in a male buffalo calf.

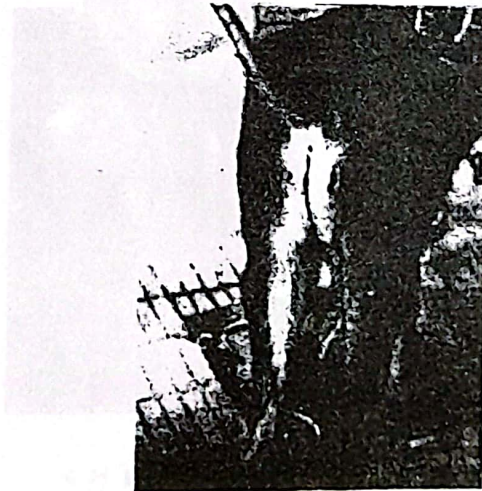


Fig. (8b) The animal after treatment and application of pursestring suture.

The complete prolapse of the rectum was larger and more cylindrical and the covering mucosa was rosy red in recent cases (Fig. 8) while it was necrotic and traumatized in old standing ones (Fig. 9). In both types of rectal prolapse, the affected animals suffered one of the conditions that causes tenesmus as constipation, diarrhea, enteritis or proctitis and the surgical treatment in addition to correction of diet and the anthelmintic used gave good results.

Recent third degree rectal tearing was recorded in two Friesian cows admitted to the clinic with a



Fig. (9a) Complete rectal prolapse with necrosis of the mucosa in a donkey.



Fig. (9b) After submucosal resection.

history of dystocia. Clinical examination revealed disruption of the entire wall of the rectum, vagina, perineal body, anus and vulva creating a common opening between the rectum and vagina (Fig. 10). Reconstruction of the walls of the rectum and vagina through 6 bite interrupted vertical mattress suture gave good result.

Concerning perianal neoplasms, 4 types were recorded in this study, equine sarcoid, fibropapilloma, hemangiosarcoma and melanoma.

Equine sarcoid was recorded as a perianal tumour in a donkey in the form of a rosy red sessile mass similar to proud flesh (Fig. 11a). Histopathologically the lesion appeared as a proliferating fibroblasts and collagen fibres of whorl pattern showing uniform arrangement. The epidermis was hyperplastic with long rete pegs in addition to areas of necrosis and ulceration (Fig. 11c). The tumour was surgically excised (Fig. 11b) without recurrence.

Perianal melanoma was recorded in a mare and a

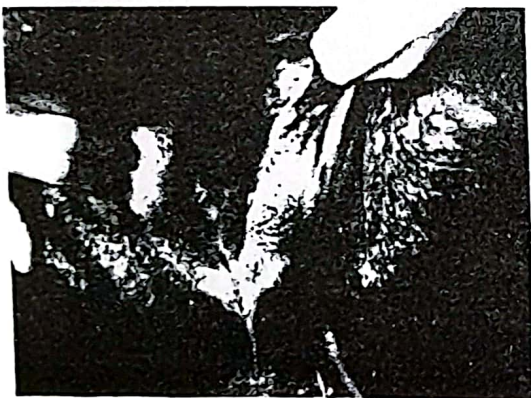


Fig. (10): Third degree rectal tearing in a Friesian cow.



Fig. (11 a) Perianal sarcoid in a donkey.



Fig. (11b) The same animal after surgical excision of the tumour.



Fig. (11c) Microscopical picture of sarcoid characterized by long rete pegs (H & E. x 200).

mule of 9 & 7 years old respectively. The two animals had a gray coat. The tumour, as the history revealed arises as a solitary nodule and by time several subcutaneous nodules arised around the anal opening with difficulty in defecation. Clinical examination revealed presence of multiple perianal nodules while rectal examination revealed stenosis of the anal opening and the poste-

rior part of rectum. Gross examination of the tissue specimen showed that it was severely pigmented while on microscopical examination, hypercellularity of melanoblasts was seen (Fig. 12). The two cases were not interferred with surgically.



Fig. (12a) Perianal melanoma in a mare .

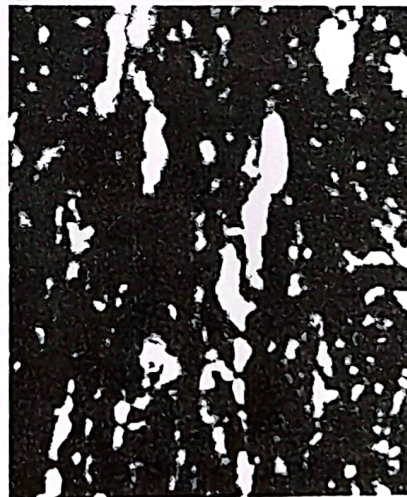


Fig. (12b) Microscopical picture of melanoma showing hyper cellularity of melanoblasts (H & E. x 150).

alone was not observed in those cases in which atresia ani was accompanied with rectovaginal fistula. On the other hand, some of these cases was observed at advanced age. This ensures that some animals can survive several months without diagnosis or treatment in (Smith et al., 1992).

Malinterference in case of atresia ani was recorded in 3 cases. The surgical interference was carried out to correct the position of the anal opening and to relieve stenosis that could be occurred as a result of progressive fibrosis of the opening present.

Rectal prolapse was recorded in this study in two forms, mucosal and complete. The condition was accompanied with tenesmus as a result of constipation, diarrhea or proctitis. The same causes were recorded by Turner and Fessler (1980), Frank (1981), O'Connor 1982 and Hofmeyr (1988). On the other hand, predisposing causes leading to rectal prolapse may include weakness of the anal sphincter, loose attachment of the mucous membrane to the muscular coat or loose attachment of the rectum to the perirectal tissues (Frank 1981 and O'Connor 1982). Administration of an anthelmintic drug to the affected donkeys was to destroy *Gasterophilus* larvae that may be a cause for rectal prolapse (Hofmeyr 1988).

Third degree rectal tearing was recorded in two Friesian cows. The condition is rare in cows owing to their less violent expulsive effort at

parturition, a finding that was confirmed by Straub and Fowler 1961, Hudson 1972 and El-Seddawy 1993 who stated that, it is extremely rare for a cow to sustain third-degree lacerations when calving is unassisted. However, these cases are thought to be due to aggressive manipulation and mal-traction of the fetus during parturition. The immediate interference in these cases depends on that reconstruction can be done as an emergency procedure within few hours (Vaughan et al., 1988).

Perianal tumours recorded in this study were equine sarcoid, melanoma, fibropapilloma and hemangiosarcoma. Melanomas were recorded in a mare and a mule with gray coat. This is in agreement with that recorded by Dietz and Wiesner (1984) who mentioned that older gray horses are the most likely to develop melanomas. The under surface of the tail, perineal and perianal regions are the most recorded sites of melanomas (Dietz and Wiesner 1984; Freeman and Martin 1992 and Abd El-Maboud et al., 1994). These cases were not operated as surgery was not advised in such condition as it is indicated only in case of solitary melanomas but in such cases the surgical interference may accelerate the spread of the condition (Freeman and Martin 1992).

Sarcoids occur most frequently on the head, legs and ventral trunk especially the prepuce and may be of verrucous (warty) type, fibroblastic (proud flesh) or mixed type; sessile or pedunculated

(Stedham, 1984). No records were found on sar-
coid as perianal tumour of fibroblastic type as re-
corded in this study.

Fibropapilloma was recorded in a Friesian cow of
6 years old. A similar lesion was recorded by
Nassef et al. (1985). The condition is common in
cattle and is caused by a DNA virus of the papo-
virus group (Stedham, 1984).

Concerning hemangiosarcoma, no records was
found on the presence of this type in the perianal
area but Hargis (1995) mentioned that this type
may arise due to trauma or solar radiation and it is
more common in dogs less in other animals and
may occur primary to skin.

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