SURGICAL MANAGEMENT OF CERTAIN UMBILICAL AFFECTIONS IN CALVES AND FOALS

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SUMMARY

The present study aimed to detect the common and rarely occurred surgical affections observed at the umbilical region in both calves and foals as well as their surgical management . 105 animals (46 cow calves , 42 buffalo calves and 17 foals) suffering different umbilical affections were admitted either to the Surgery Clinic of the Fac. of Vet. Med., Mansoura University or collected from different localities and farms in Dakahlia Province. The age, type, number , species of the affected animals and the incidence of each umbilical affection were recorded . The history , physical examination and clinical signs as well as histopathological examination of navel granuloma and surgical interference of these affections were described .

Eleven types of umbilical affections were encountered. Umbilical hernia was the most common one (37.1%) followed by umbilical abscess (20.9%) , short cut of the umbilical cord (11.4%) , omphalophlebities (8.7%) , blood collection after ligation of amniotic membrane (4.8%), incomplete retraction of umbilical contents (4.8%) , navel granuloma (3.8%) and pervious urachus (4.8%) . Uncommon umbilical affections such as abomaso-umbilical fistula, umbilical eventration, and enterocutaneous fistula were recorded in this study . Good healing with satisfactory recovery was obtained after surgical interference . Navel infection could be minimized through good sanitary conditions during and after parturition .

INTRODUCTION

The umbilicus is the remnant of the fetal maternal connection . In the developing fetus , the various component structures of the umbilical cord pass through the ventral abdominal wall . These comprise the umbilical vein which leads to the liver, paired umbilical arteries which arise from the iliac arteries as well as the urachus which passes to the bladder. At birth , the amniotic membrane of the cord is torn and gradually the umbilical vein and the urachus close , although they temporarily remain outside the umbilicus . *(Bouckaert and de Moor, 1965).(Fig.1).*

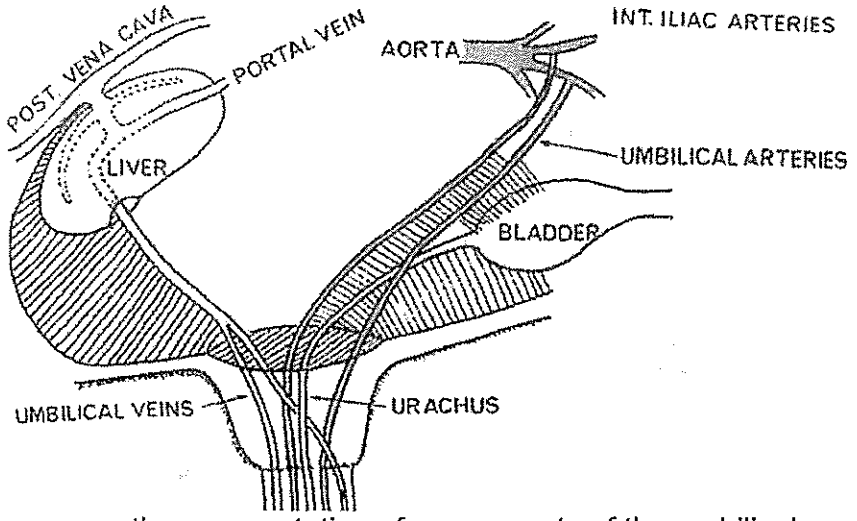

Fig.1 : Diagrammatic representation of components of the umbilical cord in the fetus (after Bouckaert and de Moor, 1965) .

Pneumoenteritis and umbilical affections are considered the main clinicopathological syndromes behind calf losses *(Nigam et al., 1984).* The umbilical lesions represent 72% of the surgical affections in calves between two weeks to six months old and categorized umbilical inflammation into omphalitis , omphaloarteritis and omphalourachitis *Khamis (1979).* An umbilical mass represents one of the two basic situations , inflammation and or herniation *(Senna, 1994).* Moreover, *Blowey and Weaver (1991)* demonstrated six affections of the navel in calves as umbilical hernia , umbilical eventration , umbilical abscess , umbilical granuloma , omphalophlebitis and navel suckling .

Umbilical hernias are the most frequently encountered equine hernia and are mostly seen in female and occur in 0.5 to 2 % of all horses *(Peyton 1981 and Fretz et al., 1983).* Congenital umbilical hernias are common defect in calves and foals while acquired hernia has been attributed to traction of the umbilicus during parturition , umbilical infection or external trauma *(Labik et al.,1977 and Holt 1986).* Many small (5 cm) reducible umbilical hernias closed spontaneously as the animal mature while surgical repair is indicated in unresolved cases by the time the foal or calf is 6 months of age *(Hayes 1974 and Fretz et al 1983).*

Leipold and Dennis (1980) described abdominal fissure as a variable degree of opening in the ventral abdominal wall with herniation of the organs . *Ramadan and Abdin-Bey (1998)* reported abdominal fissures associated with eventration of the intestine at the umbilicus in a foal, 2 lambs and a goat –kid .

Other umbilical abnormalities include haematoma within the umbilical cord , omphalocele , persistent patent omphalomesentric duct (the communication between the embryonic gut and the yolk sac) with everted bowel mucosa were also recorded by *Bauer and Retik (1978) , Barid (1993) and Textor et al (2001) .*

Pervious urachus is frequently seen in both calves and foals . If the condition persists for sometimes , retrograde infection generally results in infection of the umbilical area , abscess formation , peritonitis and *cystitis (Lundvall , 1988 and Robertson&Embertson 1988) .*

Infection of the umbilical remnants may result in septicemia , disseminated abscess , peritonitis , uroperitoneum or an ascending infection of the liver , dysuria , incarceration of the small intestine and chronic unthriftiness *(Othman et al., 1984 and Baxter 1989) .*

Abomaso-umbilical fistula is a fistula through which ingesta could be squeezed with severe adhesions. *(Newcomb & Morton, 1970 and Fubini & Smith, 1984).*

The present work aimed to declare the common and rarely occurred surgical affections observed at the umbilical region in calves and foals as well as their surgical management .

MATERIALS AND METHODS

The present investigation was performed on 88 calves (46 cow calves and 42 buffalo calves) and 17 foals suffered from different umbilical affections (Table 1). These cases were admitted to the Surgery Clinic of the Fac.of Vet. Med ., Mansoura University and collected also from different localities and farms in Dakahlia Province . The age of the affected animals ranged from birth up to 6 months old. The distribution of each affection among calves and foals wee tabulated in table 1 . The history , physical examination and clinical signs as well as histopatholgical examination of navel granulomas and their surgical treatment were described .

Surgical interference :

Anesthesia :

The calves were operated under the influence of xylazine Hcl 2% (Xylaject , ADWIA) at a dose of 0.05 mg/kg B.W. and circular infiltration anaesthesia using lidocaine Hcl 2% (Xylocaine , Astra Sodertalje , Sweden) while the foals were premedicated with Acepromazine (Vetranquil 1% , Libourne Cedex , France) in a dose of 0.05 mg/kg B.W. and chloral hydrate narcosis at a dose of 5 gm/50 kg B.W., 10% concentration . The animals were approached either in lateral or dorsal recumbency .

Umbilical hernias were treated surgically through either a closed or opened reduction where an elliptical skin incision was made on either side of the umbilical scar. The skin within the two incisions was dissected free to expose the external sheath of the rectus abdominus muscle .The dissection was continues 1-2cm peripheral to the hernial ring where the hernial sac is inverted into the abdominal cavity. If adhesions were present, the sac was opened, resected and discarded (12 calves) The ring was closed by a series of horizontal interrupted mattress suture through its edges using polyglycolic acid (Dexon) (Fig. 2) or silk (Fig. 3 . Hernial tape was used for large hernial

rings (4-5 fingers) (Fig. 4) . Five cases (3 calves and 2 foals) were left without surgical interference where the hernial ring was admitted one or two fingers and reducible.

Navel granulomas were excised through an elliptical skin incision around the base of the mass. The mass was dissected free and the skin incision was closed. Specimens(5×5×5mm) were cut and preserved in 10% formalin. Histopathological processing of the specimens was performed according to *Lillie et al (1984) .*

In cases of umbilical eventration : A mixed breed male cow calf and a buffalo calf were presented following natural delivery and suffering fissure at the umbilicus and eventration of the intestine (Fig 5A . The owner was carefully wrapped the umbilical region and the prolapsed intestine with a clean cloth and restrict the movement the calves in an attempted to protect the viscera . Prior to surgery , the calf received slow intravenous injection . of warm physiological saline (0.9% Nacl) solution with 5% dextrose (1 L) , pencillin G.sodium (20000 I.U./Kg B.W.) and flunixin meglumine (Finadyne , 1mg / Kg B.W.) . The prolapsed intestine was flushed with warm isotonic saline solution . The umbilicus was carefully widened using blunt scissors for intestinal reduction . The wound edges were refreshed , the abdominal cavity was lavaged with 2 L of warm physiological saline solution and the wound was closed using a series of horizontal interrupted mattress sutures. The s/c tissues and the skin were routinely closed (Fig . 5B).

Conservative treatment was performed in 2 foals and a cow calf suffering pervious urachus . A cotton swab dipped in 5 % tincture of iodine was introduced 4-5 cm inside the urachus towards the urinary bladder . This was repeated once daily for 3-5 successive days along with systemic antibiotics . A liquid parafin enema was used in a foal which had meconium impaction . Surgical resection of the urachus was performed in 2 foals where conservative treatment failed . An elliptical skin incision was made around the umbilicus . The linea alba was incised anteriorly and posteriorly to allow manipulations . After thorough dissection , the urachus and umbilical vessels were doubley ligated using chromic catgut No.1 and then severed and the infected mass was dissected out (Fig. 6). The abdominal wound was closed by modified Mayo suture pattern(vest over – pants overlapping suture) (Fig. 7A). Closure of the s/c tissues and the skin were routine (Fig . 7B)

In cases of omphalophlebitis , all suppurative materials were completely drained and the wound was saturated with povidone iodine 3 times daily . Surgical excision of the chronicaly infected umbilical remnant was performed in one case (Fig. 8) which did not respond to the previous treatment .

In cases of short cut of the umbilical cord, the wound edges were debrided and the skin was sutured by simple interrupted suture using silk. Cases of blood collection after ligation of aminiotic membrane were treated by lancing

of the amniotic membrane with discharging of the infected blood . The swelling was squeezed and filled with povidone iodine (Betadine). The umbilicus was touched 3 times daily with Betadine antispetic.

In cases of incomplete retraction of umbilical contents , the amniotic membrane was opened and the blood vessels were double ligated at the most highest point near the abdominal wall , then resected . The skin at the umbilicus was debrided and sutured .

Postoperative care

A systemic course of broad spectrum antibiotic (pentomycin,Univet-Ireland) for 3 successive days was given for all operated animals together with a prophylactic dose of antitetanic serum in foals . The skin was touched 3 times daily with povidone iodine until removal of the stitches 10 days postoperation .

RESULTS

Umbilical hernia was recorded in 26 calves and 13 foals . The hernial contents could be easily reduced except in 3 calves . Two of them had adhesions from previous surgical interference and the third case had skin ulceration at the umbilicus. The hernial rings were easily to be palpated , it was oval(24cases) or rounded (15cases) in shape and varied in size from admission of one to four fingers (Fig. 9). Reducible umbilical hernias were non painful to the affected animal. Complete healing was obtained after herniorrhaphy or spontaneously without complications except in 3 calves, the hernias were recurred . The operations were performed for the second time and the hernial rings were closed with hernial tape . Satisfactory recovery was obtained , however, slight thickening was noticed at the umbilicus .

Twenty two calves were presented with umbilical abscesses . Examination of the affected calves revealed a hot , painful , circumscribed swelling at the umbilicus (Fig.10A) . Topical application of ichtyol ointment resulted in a change to a more fluctuating swelling which was successfully lanced and drained . Omphalophlepitis was recorded in 9 cases, suppurative discharge from an inflamed navel was seen (Fig.10B) the affected calves often suffer poor performance and recurring fevers. All cases were responded to the mentioned treatment and second intention healing took place within 10-20 days.

Navel granuloma was diagnosed in 2-4 weeks old 4 buffalo calves (3 males and a female) as a small ulcerated piece of bright red flesh mass that protruded from the navel (Fig.11A,B&C) . Good healing was obtained after surgical excision in all cases . Microscopical examination revealed that the granuloma consisted of focal aggregation of chronic inflammatory cells mainly fibroblasts (Fig.11D) .

Clinical examination of the calves with umbilical eventeration 1 hour after labour, revealed contaminated and fully exposed congested jejunum (Fig.12A). Satisfactory recovery was obtained 14 days postoperation after reduction of

the prolapsed part and closure of the abdominal defect by a series of interrupted horizontal mattress sutures (Figs.12B&13) .

Four foals (a male and three females) and a female calf aged 2 – 10 days has a history of intermittent dribbling of urine at the umbilical region, the navel remain wet and the navel infections were seen in four cases . The associated concurrent problem includes meconium impaction in a foal and a mild degree of contracted tendons of the forelimbs in the calf . Conservative treatment for the pervious urachus cases gave satisfactory results in 2 foals and calf within 4-6 days . In the other 2 cases radical surgery was performed and good results were obtained.

Abomaso-umbilcal fistula was recorded in 3 months old mixed breed female cow calf which had a history of omphalitis . Clinically , fluid ingesta was discharged from the umbilicus (Fig . 14A) . An elliptical skin incision was performed and the skin was dissected (Fig . 14 B) . The abomasal fistula was widened with removal of the ingesta and the necrotic tissues were excised (Fig.14C&D) . The abomasum was dissected carefully from the abdominal muscles and closed with 2 rows of Lembert's sutures using chromic catgut No.2 (Fig.15A) . The abdominal wound was closed as usual (Fig.15B). Slight inflammatory swelling was noticed 10 days postoperation (Fig.15C). This swelling was subsided gradually and completely disappeared 35 days postoperation (Fig.15D) The animal retained its normal health condition with satisfactory wound healing 3 months postoperation .

Enterocutaneous fistula was recorded in a male cow calf with a history of discharging fluid ingesta from a small narrow orifice 3 weeks after umbilical herniorrhaphy (Fig.16A). The animal was injected with pentomycin for 5 successive days before surgery and zinc oxide oint. was topically applied around the orifice . A purse-string suture using silk was applied around the orfice after its debridement (Fig .16 B) . The area was touched daily with povidone iodine . Complete closure with healthy granulation tissue formation was obtained within 3 weeks postoperation (Fig .16 C) .

Good healing was obtained in cases of short cut of the umbilical cord (Fig.17) , blood collection within the amniotic membrane (Fig.18)as well as cases of incomplete retraction of umbilical contents (Fig.19).

DISCUSSION

The umbilical opening is present to provide passage of the urachus , the umbilical arteries and veins. Separation of the umbilical cord allows the umbilical arteries and urachus to retract into the abdomen, where they close by smooth muscle contraction while the umbilical vein and remnants of amniotic membrane remain outside the body wall *(Noden and deLahunta, 1985a)*. The umbilical stalk normally dries and thins out by 3 to 4 days post-delivery and totally eliminated by 3 to 4 weeks of age. Diagnosis of umbilical lesions has traditionally been based on history and physical examination *(Trent and Smith , 1984 , Baxter , 1989 and Lillich and DeBowes , 1999)* .

Umbilical hernias were seen most commonly in animals less than 6 months old . Congenital hernias were thought to be caused by failure of abdominal wall closure . Acquired hernias may result from excessive straining or may be developed after umbilical cord infection *(Aanes , 1980 , Tulleners & Fretz , 1983,and Krishnamurthy , 1996).*

In the present study , umbilical hernia was the most common umbilical affection recorded in calves and foals (37.1 %) . These cases could be corrected surgically without any clear postoperative complications . The same was declared by *Youssef et al. (1993), Kennway (1995) and Khamis et al. (1997)* who emphasized the need for surgical correction of umbilical hernia and advocated it as one of the most effective method .The recurrent recorded cases may be due to the decrease in the tensile strength of the synthetic absorbable suture material before complete healing of the hernial ring .

Umbilical hernia was comparatively more frequent in females (23 cases) than in males (16 cases) This was in agreement with *Hayes(1974), Fretz et al. (1983) and Krishnamurthy (1996) .While Herrmann et al. (2001)*recorded a significantly higher incidence in male calves (2.2%)compared to female calves (1.5%) .The incidence of umbilical hernia recorded in foals was low (13 cases) in comparison with calves (26 cases) . This could be attributed to the low number of exposed foals in comparison with calves .

Spontaneous healing was obtained in cases of reducible umbilical hernias with small rings (1-2 fingers) when the animals get older (6–8 months) . The explanations for spontaneous recovery could only presumably the abdomen becomes deeper while the mesentery becomes relatively shorter as the animal grows the viscera is thus withdrawn within the abdominal cavity while the umbilical ring cicatrize behind it *(Nelson, 1988 and Edwards, 1998)* . Slight thickening at the operation site noticed in large umbilical hernias may be due to excessive fibrous tissue formation around the used hernial tape.

The present study agreed that all umbilical hernia repairs were elective procedures and were performed in normal animals for cosmetic reasons *(Fretz et al. 1983)* while *Markels et al (1987)* mentioned that animals with irreducible hernias require immediate surgical repair.

Surgical repair of the umbilical hernia was accomplished with either a closed or an opened reduction. Although the closed reduction avoided exposing the abdominal viscera but it involved much dissection of soft tissue with high recurrence rate and thickening observed at the repaired rings while an opened approach showed no recurrence for hernial repair because it permits removal of umbilical remnants and closure of freshly debrided abdominal wall. These observations coincides with that reported by *Johnson (1970), Aanes (1980), Fretz et al. (1983) and Fubini & Smith (1984).* No cases of intenstinal obstruction were seen in calves where the omentum was the tissue usually found in the hernia.

The etiology of abdominal fissures at the umbilicus is still obscure while its frequency is said to be uncommon *(Leipold and dennis 1980).* During fetal development abdominal viscera normally pass through the umbilicus to lie outside the abdominal cavity as term approaches the viscera was normally drawn within the abdominal cavity and the umbilical opening closes around the cord *(Noden and deLahunta, 1985b).* The condition was considered as a congenital defect where the yolk stalk may be persist from jejunum to the umbilicus as fibrous cord which allows direct communication to the surface of the body resulting in variable degree of eventration of the abdominal contents particularly the intestines. Abdominal fissures with eventration should be differentiated from cases of Schistosoma reflexus which characterized by severe closure defects of the thoracic and abdominal cavities together with curvature and twisted deformities of the spinal column *(Ragab et al 1988, tiwari et al 1990 and Saperstein 1993).*

In the present study abdominal fissure at the umbilicus associated with eventration of the intestine were recorded in 2 calves presented following a natural delivery. Clinical examination revealed contaminated and congested fully exposed jejunum. Satisfactory recovery was obtained 14 days postoperation after reduction of the prolapsed part and closure of the abdominal defect by a series of interrupted horizontal mattress sutures. Similar cases were reported by *Ramadan and Abdin-Bey (1998).*

Persistent or patent urachus is a condition of young foals in which the urachus fails to close spontaneously at or shortly after parturition *(Hackett et al. (1982), Richardson, 1985 and Robertson & Embertson , 1988) .*

In the present study pervious urachus was more frequent in foals (4cases) than calves (1case). Similar observation was recorded by *Richardson, 1985 and Lundvall (1988)* who referred this condition to the relatively larger umbilical cord of the foal than of the calf and it is more commonly the site of the navel infection, persistent urachus and umbilical hernia while *Walker and Vaughan (1980) and Adams and Fessler (1987)* attributed patent urachus to interaction of the umbilical vein and arteries rather than to a failure of the urachus to close after birth. *Richardson (1985) and Adams and Fessler (1987)* observed that omphalophlebitis was a constant attendant and could be argued as either the cause or an effect of patent urchus .The same finding was recorded by the present study.

Patent urachus was manifested as periodic stream of urine issuing from the umbilicus. The navel remains wet. The associated concurrent problems include omphalophlebitis, meconium impaction and contracted tendons. It was treated by administration of parenteral antibiotics and general sanitation with touch of the urachus by tincture of iodine once or twice daily for 5-7 days when spontaneous closures does not follow by this time the urachus was

resected along with the cutaneous navel. *Richardson (1985) and Adams et al (1988)* reported similar findings.

Calves with umbilical abscesses were unthrifty and the umbilical enlargement was usually warm , non reducible and could be firm or fluctuant . A ring could not be palpated and this may induce signs of pain. This was in agreement with *Kawcak and Stashak (1995)* . Postpartum infection or abscessiation of the umbilical cord remnants has been described in calves and foals and has been incriminated as a source of infection *(Adams and Fessler, 1987 and Reef et al., 1989)* .

Surgical removal of navel granuloma gave satisfactory results in this study . *Blowey and Weaver (1991)* reported that navel granuloma was removed by ligation at its base . However, large and sessile umbilical granulomas with a wide base or with small deep lesions or very friable lesions should be removed surgically .

Abomaso-umbilical fistula had been reported in association with umbilical infection. Diagnosis was relatively simple and was based on the observation of luminal contents from an umbilical fistula. Attempts to oversew the fistula in situ without resection had not been successful. Similar findings were reported by *Fubini & Smith (1984) and Parker & Fubini (1986,1987).* Treatment involves resection of the fistula with contaminated umbilicus and involved abomasal wall.

Roback & Nicoloff (1972) and Baily & Fretz (1983) recorded that the most common hernial contents involved in calves were the abomasums with or without omentum. Rarely, the viscera may become devitalized and ruptured to the outside resulting in an enterocutaneous fistula. This fistula may also be caused by puncture of the viscera with needle during herniorrhapy . They added that the most serious consequences of an enterocuraneous fistula was the losses of large volumes of intestinal fluids resulting in severe electrolyte disturbance and emaciation.

The recorded case of enterocutaneous fistula was occurred as a complication of herniorrhaphy it was treated by a simple technique by allowing second intention healing with a resultant granulation tissue formation 3 weeks after closure . Meanwhile *Goligher (1971) and Roback and Nicoloff (1972)* recorded that simple closure of an enterocutaneous fistula was generally unsuccessful . They advised en bloc resection of the body wall and intestine, as the most satisfactory treatment. Nonsurgical management of two horses with presumptive large colon fistulae by *Bristol (1994)* has resulted in resolution of the fistulae without complication. He added that complications associated with surgical intervention include fever, colic, incisional problems and recurrence of the fistula.

***In conclusion**, the umbilicus is subjected to many surgical conditions which could be corrected successfully after early diagnosis. It is recommended that the veterinarians as well as the farmers should pay regular*

attention to the umbilicus of calves and foals as a routine husbandry. Directly after birth the umbilicus should be cleaned and touched with povidone iodine without umbilical cord ligation as blood is usually collected and in the presence of contamination; omphalitis, omphalophlebitis, omphaloarteritis and urachal infection may be occurred with subsequent development of various umbilical affections.

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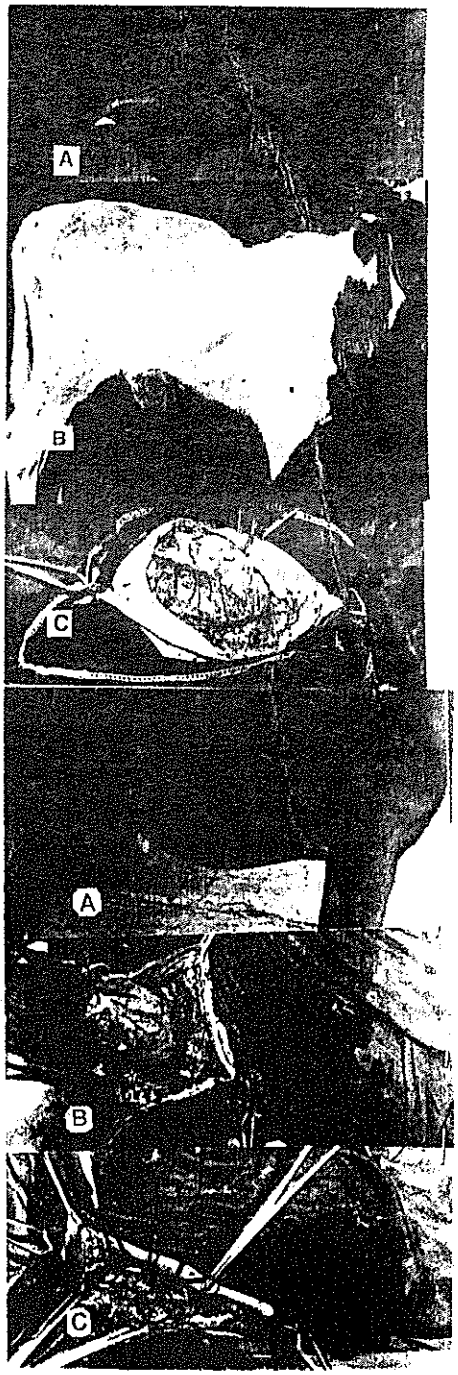

Fig.2: Umbilical hernias in buffalo calf (A) and cow calf (B) and closure of the hernial ring by a series of interrupted horizontal mattress sutures using Polyglycolic acid (C) .

Fig.3: Umbilical hernia in foal (A), after dissection and freeing of the hernial sac 1cm peripheral to the hernial ring (B). Herniorrhaphy was obtained by a series of interrupted horizontal mattress sutures using silk (C).

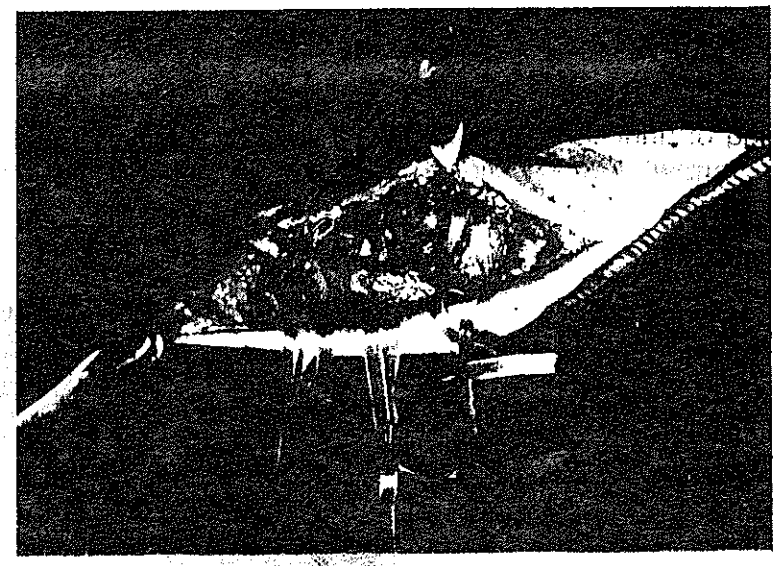

Fig.4: Large umbilical hernial ring closed with a hernial tape.

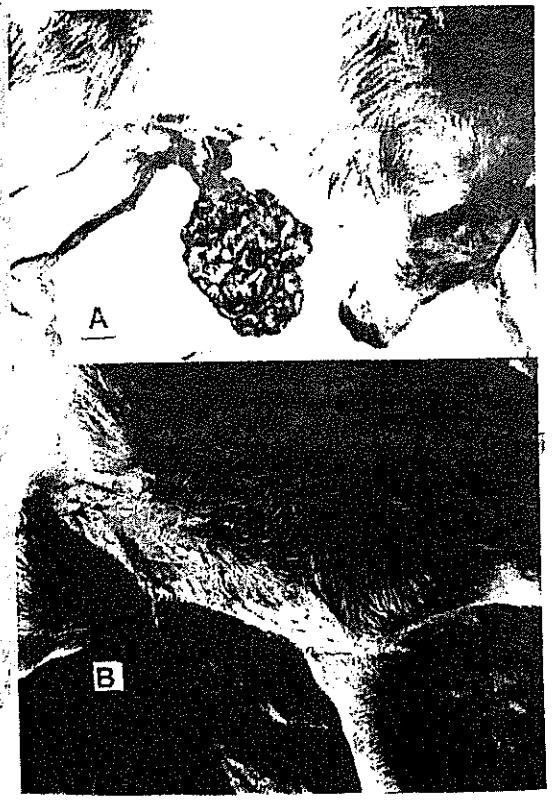

Fig.5: Eventration of small intestine through the umbilicus in a newly born buffalo calf (A) and after reduction and closure of the abdominal defect (B) .

Fig.6: Drippling of urine from the umbilicus due to patent urachus in 9 days old filly foal (A, arrow) and resection of the urachus after mildline celiotomy (B) .

Fig.7: The previous case after closure of abdominal muscles (A) and the s/c tissues and the skin (B) .

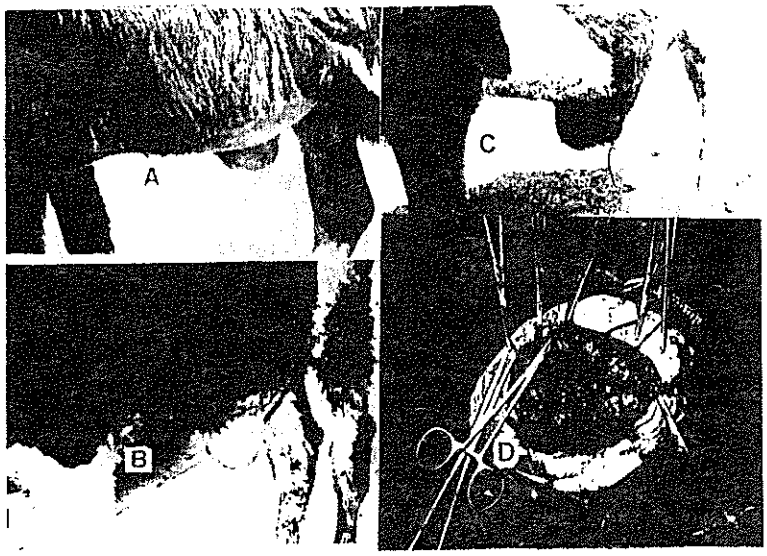

Fig.8: Surgical excision of chronic inflamed umbilical remnants in a buffalo calf (A,B&C) and the excised mass (D).

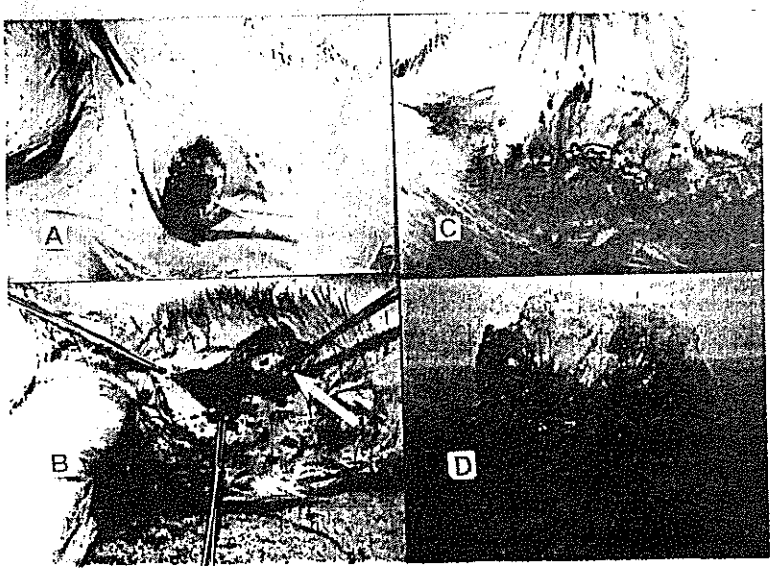

Fig.9: Umbilical hernias in buffalo calf (A) and cow calves (B&C) and closure of the hernial ring by a series of interrupted horizontal mattress sutures using of silk (D) .

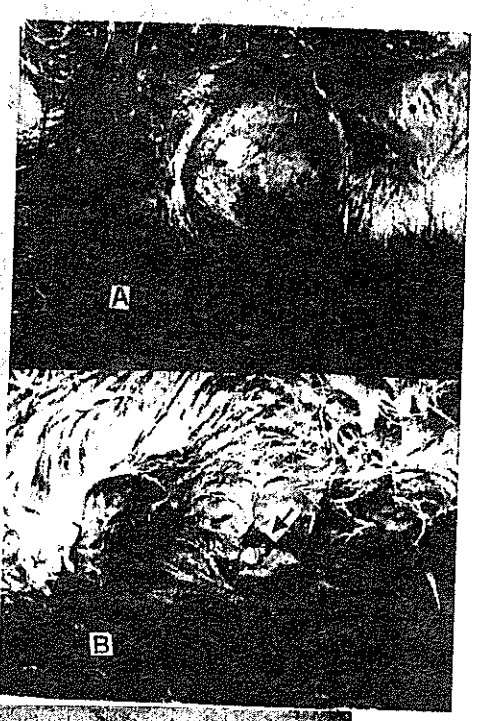

Fig.10: Umbilical abscess in a buffalo calf (A) and omphalophlebitis in a cow calf (B) .

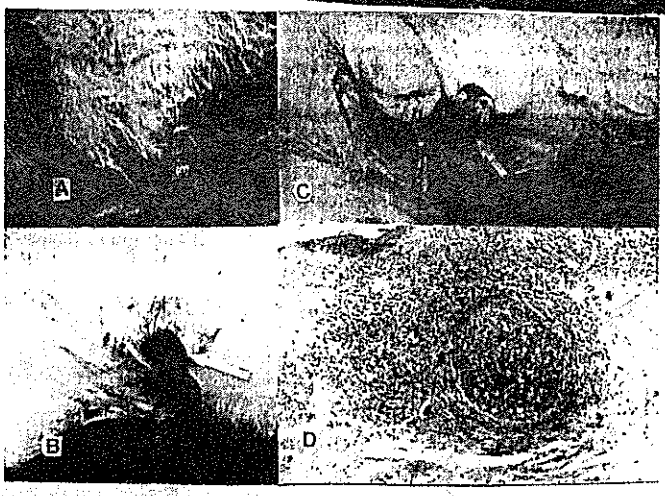

Fig.11: Different shapes of navel granulomas in buffalo calves (A,B&C) and microcpic examination (D) revealed focal aggregation of chronic inflammatory cells mainly fibroblasts (H&E . X : 300) .

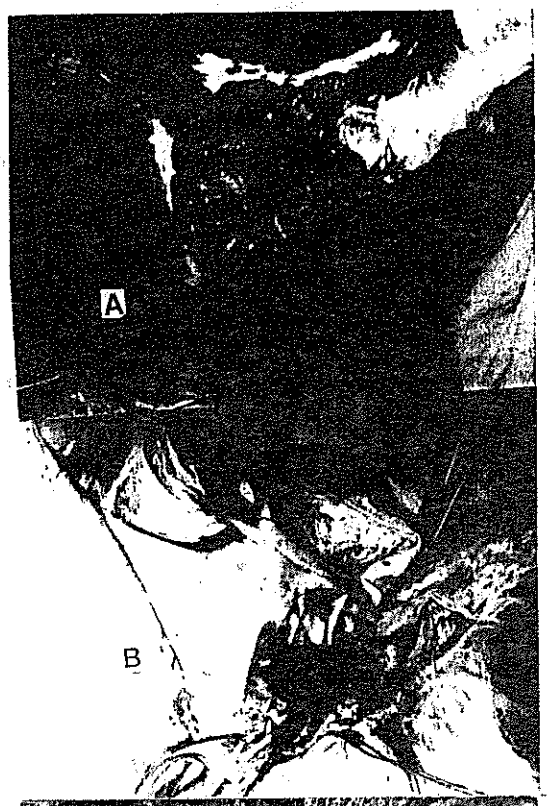

Fig.12: Eventration of small intenstine through the umbilicus in a newly born calf (A), after reduction and application of a retention sutures (B).

Fig.13: The previous case after skin closure (A) and 14 days postoperation with complete healing (B).

Fig.14: A fistula discharging fluidy ingesta at the umbilicus in 3 months female calf (A, arrows). Undigested piece of food protruded from a narrow necrotic orifice (B), undigested food (C), necrotic tissue and fluidy ingesta (D) were seen after an elliptical skin incision and freeing of the abomasums.

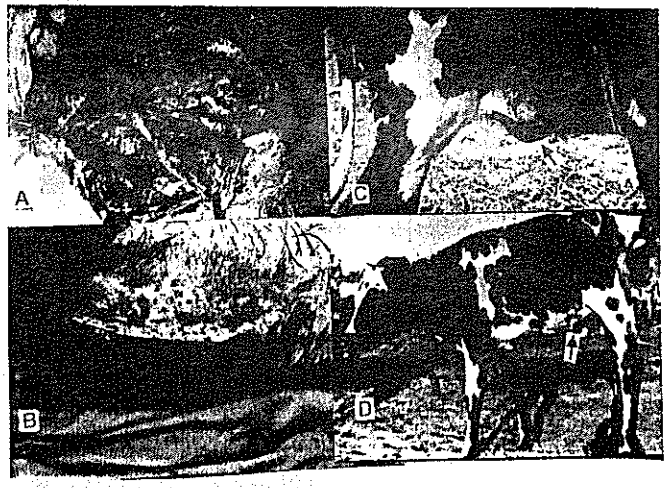

Fig.15: The abomasal wound closure (A) and the skin (B) , slight oedema around the healed wound 10 days postopreation (C,arrow) which was disappeared with complete healing at 35 days postopreation (D,arrow) .

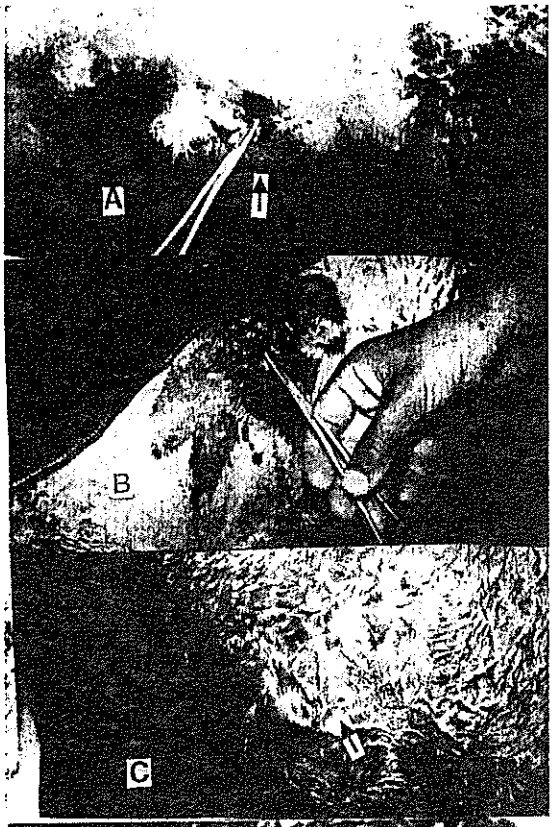

Fig.16: A narrow orifice discharging ingesta near the umbilicus (Enterocutaneous fistula A, arrow), a purse-string suture was applied after thorough debridement (B) and healthy granulation was formed and fill the orifice 3 weeks postopreation (C,arrow).

Fig.17: Short cut of the umbilical cord immediately after birth (A, arrow) and after complete healing (B, arrow).

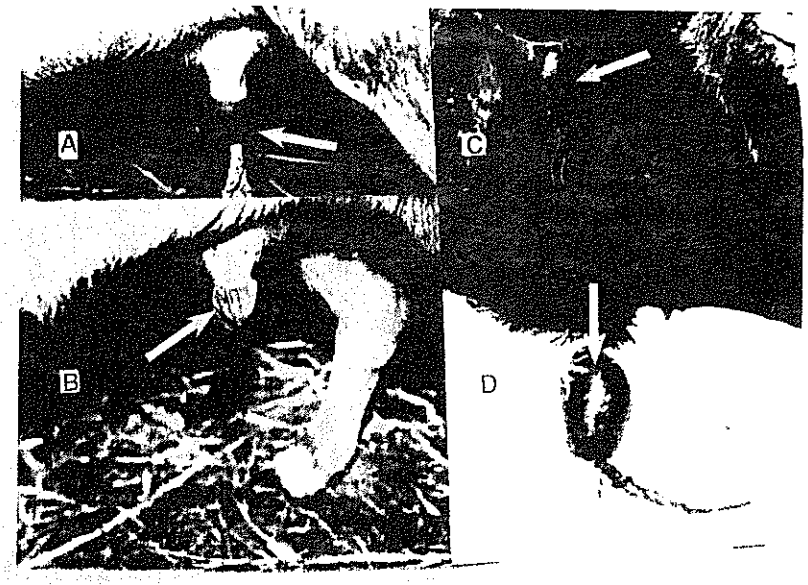

Fig.18: Blood collection after ligation of amniotic membrane in a buffalo calf (A) and cow calves (C&D). The swelling was incised and soaked with Betadine (B, arrow) .

Fig.19: Incomplete retraction of all umbilical contents (A, arrow) and one umbilical blood vessel (B, arrow) .

Table 1) : Distribution of umbilical affections among calves and fools .

Type of umbilical affection	Cow calves		Buffalo calves		foals		Total	Percentage (%)
	Male	Female	Male	Female	Male	Female		
Umbilical hernia	6	8	4	8	5	8	39	37.1
Umbilical abscess	4	7	6	5	–	–	22	20.9
Navel granuloma	–	–	3	1	–	–	4	3.8
Umbilical eventration	1	–	1	–	–	–	2	1.9
Abomaso- umbilical fistula	–	1	–	–	–	–	1	0.95
Pervious urachus	–	1	–	–	2	2	5	4.8
Enterocutaneous fistula	1	–	–	–	–	–	1	0.95
Omphalophlebitis	3	2	3	1	–	–	9	8.6
Short cut of the umbilical cord	2	3	4	3	–	–	12	11.4
Blood collection after ligation of amniotic membrane	1	2	2	–	–	–	5	4.8
Incomplete retraction of umbilical contents	3	1	1	–	–	–	5	4.8
Total number	21	25	24	18	7	10	105	100%

الملخص العربى

التدخل الجراحى لبعض إصابات السرة فى العجول والأمهار

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أجريت هذه الدراسة لتسجيل بعض الاصابات الجراحية الشائعة والنادرة بمنطقة السره فى كل من العجول والامهار وكذلك التدخل الجراحي لمعالجة مثل هذه الإصابات .

تم تجميع مائة وخمسة حيوان (46 عجل بقرى , 42 عجل جاموس و17 مهر) , من الحالات التى ترد إلى قسم الجراحة بالمستشفى التعليمى لكلية الطب البيطرى – جامعة المنصورة بالإضافة الى الحالات التى تم تجميعها من أماكن ومزارع متفرقة فى محافظة الدقهلية حيث كانت تعانى هذه الحيوانات من إصابات مختلفة في منطقة السرة .

تم تشخيص إحدى عشرة إصابة جراحية مختلفة بمنطقة السره وممثلة فى فتق السرة (37.1 %) , خراج السرة (20.9%) القطع القصير للحبل السري (11.4%), التهاب الوريد السرى (8.7%) , التجمع الدموي في الغشاء الأمنيونى بعد ربطه والتقلص غير الكامل لمحتويات الحبل السرى (4.8% لكل منهم) ثم ورم السرة الحبيبى (3.8%) والناسور الخلقي بين المثانة والسرة (4.8%).

سجلت هذه الدراسة بعض الإصابات الغير شائعة مثل ناسور السرة والمنفحة وشق بطني مع اندحاق سرى للأمعاء , والناسور المعوي الجلدي. هذا وقد تم مناقشة تاريخ الحالة والأعراض الإكلينيكية والتدخل الجراحى فى جميع هذه الحالات . ولقد سجل التئام وشفاء تام بعد التدخل الجراحي في الحيوانات المصابة . كما تم أيضاً مناقشة النتائج تفصيلياً مع مثيلاتها في الدراسات الأخرى .