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**DIFFERENTIAL DIAGNOSIS OF SOME SWELLINGS
AT THE HEAD AND NECK REGIONS
IN SOME FARM ANIMALS
(With One Table and 10 Figures)**

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التشخيص المقارن لبعض الأورام فى منطقة الرأس والرقبة
لبعض حيوانات المزرعة

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تم تشخيص عند ٦٩ حالة من الأورام المتموجه التى تنشأ فى منطقة الرأس والرقبة لبعض حيوانات المزرعة. وقد تم تصنيفها الى عدد: ٣٠-خراج، ٢- قبله دمويه، ٢٥- حويصله شبيهة الجلد، ٦ حويصلات فى قاعدة شرابة الماعز، ٣- حويصلات لعابيه، ٢- حويصله خيشوميه وحالة اتساع وريدى. وقد أسفر الفحص الاكلينيكي الدقيق المصحوب باختيار الوخذ الاستكشافي عن تشخيص العديد من هذه الحالات. وقد تم أيضاً اجراء التدخل الجراحى والفحص النسيج مرضى فى حالات معينه منها.

SUMMARY

Sixty-nine cases of fluctuating swellings at the head and neck regions of some farm animals were diagnosed. They were differentiated into: 30-abscesses, 2-haematomas, 25-dermoid cysts, 6-tassel cysts, 3-salivary neck cysts, 2-branchial cysts, and one case of venous diverticulum. A precise clinical examination followed by exploratory puncture were sufficient for diagnosis of many of these cases. The surgical managements as well as histopathological examination were also performed in certain cases.

Key Words: Farm Animals-Swellings-Head&Neck-Diagnosis.

INTRODUCTION

According to the available literature, fluctuating swellings at the head and neck regions in farm animals are many variable. From these: Abscesses (Bialek, 1972; Misk *et al.*, 1985; Ahmed *et al.*, 1990; Youssef, 1993; and Youssef *et al.*, 1993), Haematomas (Nigam *et al.*, 1984; and Bolbol, 1986), Dermoid cysts (Makady *et al.*, 1986; and Misk *et al.*, 1994), Tassel cysts (Ali, 1995), Salivary neck cysts (Hull and Archibald, 1964; and Othman *et al.*, 1991), Branchial cysts (Clark *et al.*, 1989; Youssef *et al.*, 1991; and Misk *et al.*, 1994); and Venous diverticulum (Misk *et al.*, 1984).

The present study aimed to throw light on the prevalent fluctuating swellings at the head and neck regions in some farm animals, with special reference to their differential diagnosis.

MATERIAL and METHODS

The present study was conducted on 69-clinical cases (6-buffaloes, 3-cattle, 30-camels, 10-sheep, 7-goats, 12-donkeys and one foal). These cases suffered from different varieties of fluctuating swellings at the head and neck regions. Some these cases were collected from Governemental farms while the other cases were presented to the clinic of the Faculty of Vet. Med. at Moshtohor.

Each case was subjected to a full study including; case history, clinical examination, diagnosis and differential diagnosis with other similar conditions.

Surgical interferences as well as histopathological examinations were performed in some of these cases.

For accurate clinical examination and surgical intervention, tranquilization of the animals was obligatory. Buffaloes, cattle, camels, sheep and goats were premedicated with xylazine-Hcl in a dose rate of 0.08 mg., 0.05 mg, and 0.2 mg/kg b.w. respectively. For equine species proionyl promazine in a dose rate of 0.1 mg/kg b.w. was used.

Prior to surgical intervention, the seat of the lesions was prepared for aseptic operation. This was followed by local infiltration analgesia using 1% procaine. Hcl solution in small animals and 2-4% solution in large animals.

RESULTS

The clinical cases under investigation were differentiated into: 30-abscesses, 2-haematomas, 25-dermoid cysts, 6-tassel, 3-salivary neck cysts, 2-branchial cysts, and one venous diverticulum. They were tabulated according to their number in different animal species as follows (Table 1):

Type of the fluctuating swellings	Animal species							Total
	Buffaloes	Cattle	Camels	Sheep	Goats	Donkeys	Foal	
1)Abscesses	1	3	12	9	1	3	1	30
2)Haematomas	-	-	-	1	-	1	-	2
3)Dermoid cysts	-	-	18	-	-	7	-	25
4)Tassel cysts	-	-	-	-	6	-	-	6
5)Salivary neck cysts	3	-	-	-	-	-	-	3
6)Branchial cysts	2	-	-	-	-	-	-	2
7)Venous diverticulum	-	-	-	-	-	1	-	1
Total	6	3	30	10	7	12	1	69

1)Abscesses

Abscesses occupy the first place among fluctuating swellings at the head and neck regions. They constituted about 43.5% from the total number of affected cases (30-cases out of 69).

Camels and sheep appeared to be the mostly affected cases (30-cases out of 69).

Camels and sheep appeared to be mostly affected animals (12 & 9 cases respectively), while the condition was diagnosed in few cases in other animal species (see table).

Some abscesses were present at the caudal (Fig. 1-C) and/or the cranial part (Fig. 1-A and 2-B) of the cervical region in close association to the regional lymph node. Other abscesses were distributed all over the neck in close association with the jugular vein (Fig. 1-B).

Many abscesses were localized at the lateral aspect of the cheek region. Some of them (two cases) had a close association to the parotid salivary glands (Fig. 2-A).

Examination of the oral cavity in ewe revealed that the condition resulted as a sequella to alveolar periostitis. (Fig. 3-A&B). In such a condition the gum was inflamed and severely swollen beside the loosely affected tooth (Fig. 3-B). The abscesses was opened and the treatment was completed as if it is a true dental fistula.

Subconjunctival and third eyelid abscesses were recorded in 3-cases of Friesian calves (Fig. 2-C).

While most abscesses were treated routinely as usual, other abscesses such as those in close association to the parotid region or at the level of the jugular vein etc. necessitated great care for their surgical management. These abscesses were opened without injury to the parotid gland or to the jugular vein.

Most abscesses of sheep took the typical picture of caseous lymphadenitis. Many of them were circumscribed and has a thick fibrous capsule. These abscesses were totally excised within intact capsule.

2) Haematomas

This condition was recorded in two clinical cases. One of them was an infected supraorbital haematoma in a ram (Fig. 2-D), which was treated as an abscess.

3) Dermoid cysts

Dermoid cysts occupy the second place among the presented cases. They constitute about 36.2% from the total number of the affected cases (925-cases out of 69). In the present study the affection appeared to be restricted to camels and donkeys (18-cases and 7-cases respectively).

The condition in camels revealed presence of rounded, hens-egg swellings. Some of them (8-cases) were recorded at the base of the ears (Fig. 4A), while in the other cases were scattered bilaterally all over the neck specially at the course of the jugular vein (Fig. 4-B, C & D). All cysts were fluctuating and the exploratory puncture revealed blackish fluid (Fig. 4-A, C&D). They were solitary recorded in 14-cases while more than one cyst (up to three) were detected in the other 4-cases (Fig. 4-B).

The condition in donkeys revealed presence of a rounded or oval swelling, not exceeding a pigeon's egg in their size. They were distributed: at the cranial border of the conchal cartilage of the external ear case, Fig: 5-A), at the muco-cutaneous junction of the medial canthus of the eyeball (one case, Fig: 5-B), below the ramus of the mandible (one case, Fig. 5-C) and along the course of the ventral aspect of the neck in 4 cases. (Fig. 5-D). All cysts were soft on palpation and the exploratory puncture revealed presence of a dirty, thick and greyish-brown fluid (Fig. 6-A).

The cross section of the excised cysts revealed that, the contents were differentiated into a muddy clay-like material and separate tufts of hairs (Fig. 6-B). The inner lining membrane carry long white hairs (Fig. 6- C&D) and was pigmented in certain cases (Fig. 6-D).

4) Tassel cysts

They were investigated in 6 goats. The cysts appeared as tennis ball sized swellings, freely movable at the base of the tassel region (Fig. 7-A).

Exploratory puncture of the cyst revealed presence of serous yellowish fluids. Cross section of the excised cyst revealed that, it had a thin wall.

5) Salivary neck cysts

They were diagnosed in 3-buffaloes. Examination of these cysts revealed existence of fluctuating, painless, non-inflammatory and gradually developed swellings. Each cyst having nearly the size of an orange. They were present at the ventro-lateral aspect of the larynx, just behind the mandibular angle (Fig. 8-A,B &C). The condition was recorded unilaterally in 2-cases (Fig. 8-A &C) and bilaterally in the other case (Fig. 8-B). Exploratory puncture of these cysts gave a thick yellowish, hony like fluid. "Thickened saliva" (Fig. 8-C).

Total excision of one cyst was performed with difficulty. The cyst has no definite wall and the salvia was detected as a lake in the subcutaneous tissues.

Microscopic examination of the wall (inner lining) of the excised cyst revealed presence of fine and delicate connective tissue, which is young, cellular and highly vascularized. Haemorrhagic spots could be seen in some areas (Fig. 8-D).

The cystic swelling in the other two cases were completely evacuated from its fluid contents using a wide pore needle aspiration. Then the cysts were injected with lugol's iodine solution. The process was repeated 3-times with an interval of 48 hs. the cysts gradually reduced in their size and recovery was obtained within 3-weeks from the first injection.

6) Branchial cysts

The condition was diagnosed in 2-buffaloe calves. The clinical examination revealed existence of soft, fluctuating, painless, non-inflammatory, and well defined gradually developed swellings. These swellings were present subcutaneously, below the level of the ear, extending downward to the under part of the lower jaw. The size of these cysts did not exceed the size of an orange (Fig. 9-A&B) and the exploratory puncture revealed milky-like coloured fluid (Fig. 9-B&C).

Surgical excision of the cysts was radical treatment and necessitated careful blunt dissection to separate the sac from the surrounding vital structures. The wall of the cyst was extremely thin (Fig. 9-C), and much time and patience were required to separate it from their surroundings. Recovery was obtained by first intention without recurrency.

Histopathological examination revealed that the cystic wall was lined by stratified squamous epithelium (Fig. 9-D).

7) Venous diverticulum

The condition was recorded in a five years old she donkey. It was presented with a history of swelling at the ventrolateral surface of the horizontal ramus of the mandible. The swelling gradually developed since one year ago. The clinical examination revealed a painless, non-inflammatory, grape like, fluctuating swelling (Fig. 10-A). A pressure applied over the swelling causes it to disappear, and when the pressure was relieved, the swelling returned at once to its presenting size.

Exploratory puncture resulted in a continuous flow of venous blood (Fig. 10-B). The preliminary diagnosis of such a condition was the dilatation of the common labial vein.

DISCUSSION

Although the head and neck regions in farm animals are prone to many surgical affections, yet fluctuating swellings may be the prevalent ones. While many of these fluctuating swellings, may be due to abscesses formation, some may be due to other causes such as haematomas, dermoid cysts, tassel cysts, salivary cysts, branchial cysts and venous diverticulum (Jubb and Kennedy, 1970; and Youssef *et al.* 1992). Therefore, the differential diagnosis of these swelling is of extreme importance before surgical intervention.

Although the clinical findings were sufficient for diagnosis of the fluctuating swellings in most cases, yet the histopathological examination was indicated in certain cases (Ahmed, 1988; and Youssef, 1993).

Branchial cysts must be differentiated from other swellings as cervical abscesses, haematomas and salivary neck cysts. On the same line, fluctuating swellings originating at the cheek regions must be differentiated from each other. These swellings may be parotid abscess, abscess following alveolar periostitis, ectasia of the parotid duct, haematomas, or accumulation of food between the cheek and teeth (Jubb and Kennedy, 1970, Youssef *et al.*, 1992; and Ali, 1995).

A precise diagnosis for such cases can be obtained by exploratory puncture. Abscesses usually give rise to pus of various colours, odours and consistency (Frank, 1981; and Jennings, 1984). The colour is usually tinged with blood in traumatized abscesses or infected haematomas (Fig. 2-D). In cases of alveolar periostitis, the abscesses usually develop from inward outward resulting in purulent osteomyelitis and ending by abscesses formation which give rise to pus of very offensive odour (Fig. 3-A & B).

Branchial cysts usually give rise to milky-like coloured fluid (Youssef *et al.*, 1991; and Misk *et al.* 1994). Salivary cyst gives thick yellowish, honey-like fluid "condensed saliva" (Ahmed, 1988; and Othman *et al.*, 1991). Dermoid cysts in camels give rise to a blackish fluid, while in donkeys it give a dirty, thick, greyish-brown fluid (Makady *et al.*, 1986 and Misk *et al.* 1994). Tassel cysts give rise to a serous yellowish fluid (Ali, 1995), while venous diverticulum gives rise to a serous yellowish fluid (Ali, 1995), while venous diverticulum gives rise to venous blood which comes in a continuous flow (Misk *et al.*, 1984).

Most fluctuating swellings were routinely and easily treated, while other swellings necessitated special and great care for their surgical management. In such instance, the procedure is somewhat long requires fastidious dissection of the swelling from the surrounding vital structures (Youssef, 1993; and Misk *et al.*, 1994).

Dermoid cysts are congenital developmental failures of epidermal closure characterized by the presence of swellings lined by stratified squamous epithelium and contains a jumbled mass consisting of fluid, muddy material and separate tufts of hairs (Jubb and Kennedy, 1985; Misk *et al.* 1994).

Branchial cysts usually develop from a remnant of the branchial apparatus of the fetus. The cysts originating from the ectodermal branchial cleft are most likely lined by stratified squamous epithelium as those recorded in the present study. The branchial cysts originating from the endodermal pharyngeal pouch are lined by pseudostratified columnar epithelium (Willis, 1958; Smith and Gunson, 1977; and Misk *et al.*, 1994).

The etiology of the salivary cysts is still obscure from the point of view many authors, but most of them attributed their formation to a leakage of saliva from an injured salivary duct into the adjacent surrounding connective tissue (Hull and Archibold, 1984; and Ahmed, 1988). As these cysts have no definite wall, their surgical excision appeared to be difficult and not indicated. The cystic evacuation followed by its injection with lugol's iodine solution several times give encouraged results (Ahmed, 1988; and Othman *et al.*, 1991).

Diverticulum of the common labial vein (branch from the facial vein) has not been described before. The condition may be confused with other swellings commonly occurring at this seat, such as foreign body abscesses and haematomas. The pressure applied over the swelling as well as the exploratory puncture can differentiate the condition from other fluctuating swellings (Misk *et al.*, 1984).

On conclusion these presented cases of soft swellings were collected all over a short period a fact which creates an opinion that other cases of such conditions may be available if further study is proceeded for a longer time.

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Fig. 5-A) A pigeon's egg sized dermoid cyst at the cranial border of the conchal cartilage of the external ear in a donkey.
B) Dermoid cyst at the muco-cutaneous junction of the medial canthus of the eyeball in a donkey.
C) Dermoid cyst below the ramus of the mandible in a donkey.
D) Dermoid cyst at the ventral mid line of the neck in a donkey.

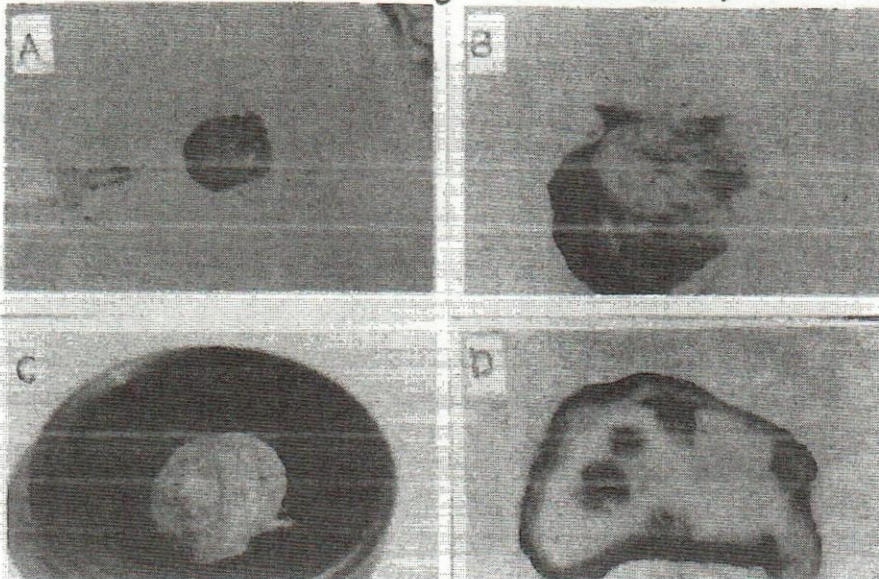


Fig. 6-A) Aspiration of the fluid content of the excised dermoid cyst in a donkey. Note the presence of a dirty, greyish-brown fluid.
B) Opening of the excised cyst revealed the presence of a muddy, clay-like material and separate tufts of hairs.
C & D) The inner lining membrane carry long white hairs and was pigmented in Fig. 10-D.

Fig. 7-A) A rounded tennis ball size tassel cyst in a goat.
B) The same animal after surgical management.

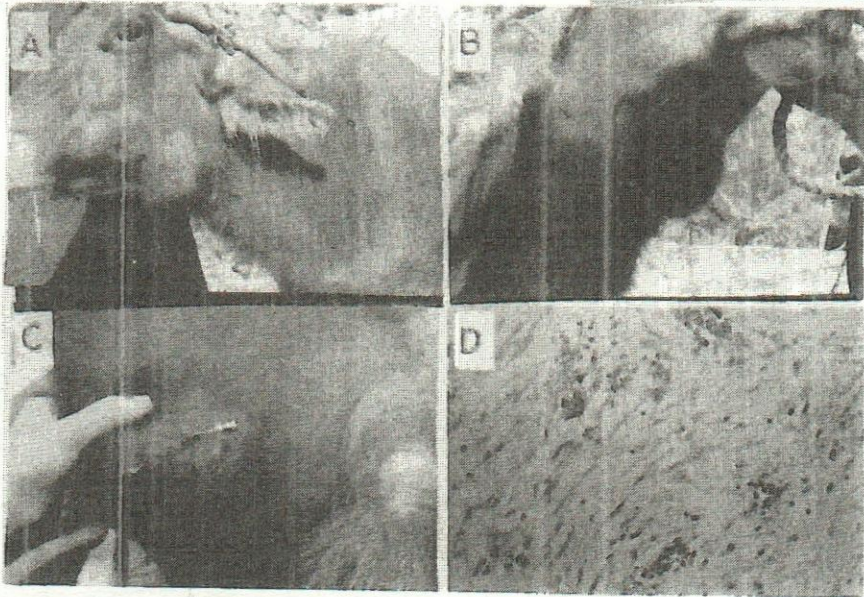
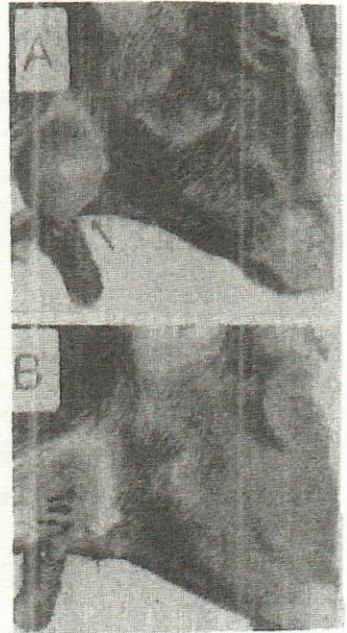


Fig. 8-A) An orange size salivary neck cyst in a buffalo.
B) Bilateral salivary neck cyst in a buffalo.
C) Exploratory puncture of the salivary cyst giving rise to thick, yellowish honey-like fluid (condensed saliva).
D) Microscopic examination of salivary cyst showing the replacement by delicate connective tissue and erythrocytic extravasations.

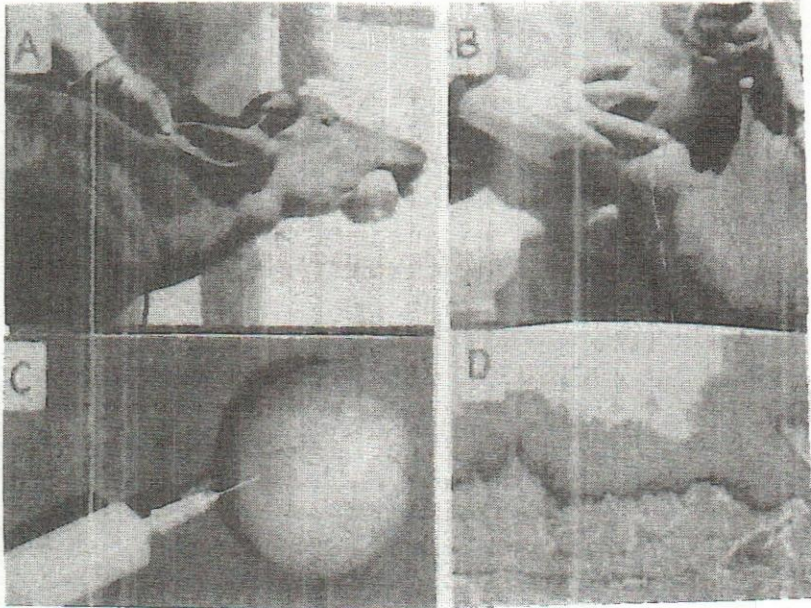


Fig. 9- A) An orange size branchial cyst in a buffalo calf.
B) The exploratory puncture of the branchial cyst gave rise to milky coloured-like fluid.
C) The branchial cyst after surgical excision. Note: The thin wall of the cyst and the milky coloured-like of the aspirated fluid.
D) Microscopic examination of the wall of the excised cyst revealed that it was lined by stratified squamous epithelium

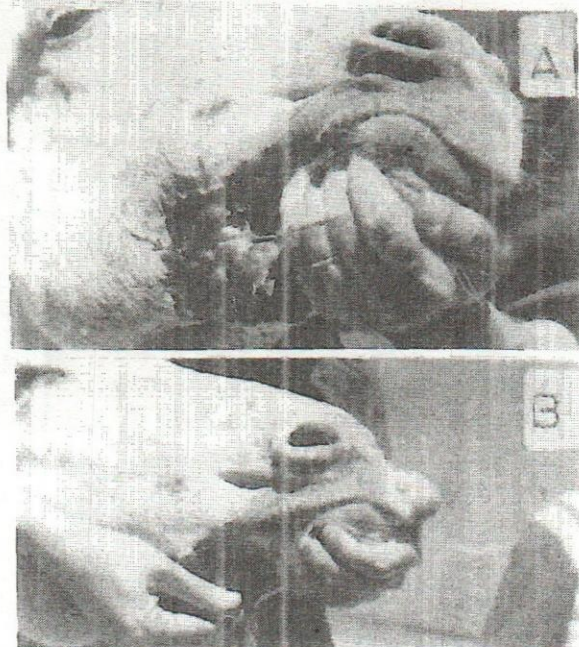


Fig. 10-A) Diverticulum of the common lipial vein in a donkey. Note: the grape-like fluctuating swelling at the horizontal edge of the mandible.
B) The exploratory puncture of the diverticulum gave rise to a continuous flow of venous blood.