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**SURGICAL EXPOSURE OF THE ORAL CAVITY
THROUGH BUCCOTOMY IN SOME
DOMESTIC ANIMALS**
(With 6 Figures)

BY

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الاستكشاف الجراحي للتجويف الفمي من خلال فتح الشدق
في بعض الحيوانات المستأنسة

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تم إجراء هذه الدراسة على عدد ١٥ حيوان بالغ سليم (٣ جاموس، ٣ أبقار، ٣ أغنام، ٣ ماعز، ٣ حمير). تم فتح الشدق تحت تأثير بعض المهدئات (الريمبون في المجاترات والكومبيلين في الحمير) والتخدير الموضعي الارتشاحي في مكان الفتح باستخدام الزيوكين هيدروكلورايد ٢%٠ تم تحديد مكان الشق الجراحي للشدق حيث يبدأ خلف زاوية الفم ب ٢ سم في الجاموس والأبقار والحمير وب ١ سم في الأغنام والماعز ويمتد للخلف حتى ١ سم أمام الحافة الأمامية لعضلة المضغ. والشق الجراحي للشدق يمر في طبقات الجلد، تحت الجلد، عضلة الشدق، طبقة غدد الشدق اللعابية و الغشاء المخاطي للشدق. ومن خلال فتح الشدق أمكن الوصول إلى العديد من مكونات التجويف الفمي والتعامل معها جراحيا والتي كان من الصعب التعامل معها عن طريق فتح الفم.

SUMMARY

The present study was carried out on 15 adult healthy animals of both sexes (Buffaloes=3, Cows=3, Sheep=3, Goat=3 and Donkeys=3). Buccotomy was performed under the effect of tranquillizers and local infiltration analgesia. The line of incision starts 2 cm behind the commissure of the mouth in buffaloes, cattle and donkeys (1 cm in sheep and goat) and extends backward till 1 cm rostral to the rostral border of the masseter muscle. The incision passes through the skin, buccinator muscle, ventral buccal salivary glands and mucous membrane. Several structures within the oral cavity

were manipulated and operated through buccotomy without any complications.

Key Words: Oral Cavity-Domestic Animals-Surgical Exposure.

INTRODUCTION

The cheeks (buccae) form the sides of the mouth and are continuous rostrally with the lips. They comprised, skin, muscular and glandular layers, and mucous membrane. The blood supply is derived from the facial and the buccal arteries. The sensory nerves come from the trigeminal, and the motor nerves from the facial nerve. (Nickel; Schummer & Seiferle 1979; Budras and Sac 1994; Dyce, Sack and Wensing, 1996). Buccotomy means surgical incision through the side of the face (cheek) to accomplish an intra-oral procedure that is inaccessible through a labial approach (Kertesz, 1993).

The aim of the present study is to justify buccotomy operation as a safe surgical procedure for exposure of many different structures in the oral cavity as well as to evaluate the technique as regards to the seat of the incision, healing process and postoperative complications in some domestic animals.

MATERIALS and METHODS

The present study was carried out on 15 adult healthy animals of both sexes (3 buffaloes, 3 cows, 3 sheep, 3 goat and 3 donkeys). Tranquillization of the animals was performed using Rompun in a dose rate of 0.05mg/kg B.W.I.M. for buffaloes, cattle and goat, 0.2mg/kg. B.W.I.M. for sheep and by using combelen for donkeys in a dose rate of 0.15 mg/kg B.W.I.V. (Hall and Clarke 1991). The cheek of the animal was prepared for aseptic operation as usual. Local infiltration analgesia using lignocaine HCL 2% was applied at the suggested line of incision. In cattle, buffaloes and donkeys, the incision starts 2cm caudal to the commissure of the mouth (1cm in sheep & goat) and extends backward till 1cm rostral to the rostral border of the masseter muscle. The level of the incision was about 2cm above the line of attachment of the cheek to the horizontal part of ramus of the mandible. The incision passes through skin, muscular layer (Buccinator muscle), glandular Layer (ventral buccal salivary glands) and mucous membrane. After operation, the incision was sutured in layers using simple continuous suture by catgut No2 for mucous membrane, muscles & S/C tissue and simple interrupted suture using silk No2 for skin.

Some operations were performed for testing the accessibility of some structures through buccotomy (Partial glossectomy, cannulation of Stenson's duct of parotid salivary gland and extraction of a cheek tooth).

The following data were observed & recorded:

- I- Suggested length for buccotomy incision.
- II- Structures which are accessible and easily to be handled and operated through buccotomy .
- III- Healing process of buccotomy wound and complications which might occur.

RESULTS

(Fig.1-6)

I- Suggested length for buccotomy incision:

	Animals	Suggested Length
1-	Cows	12-14 cm
2-	Buffaloes	14-15 cm
3-	Donkeys	10-12 cm
4-	Sheep & Goat	8-10 cm

II- Structures which are accessible and easily to be managed through buccotomy incision include:

- Upper and Lower cheek teeth (specially 1,2 and 3 cheek teeth).
- Buccal alveolar bone.
- Gum and buccal surface of the cheek .
- Tongue.
- Ostium of the Stenson's duct of the parotid salivary gland.
- Ducts of mandibular & monostomatic sublingual salivary glands.
- Hard palate.

III- Healing process and complications

Satisfactory healing of buccotomy incision was observed within 7-10 days following operation in all animals without any complications, except one sheep in which some stitches were ruptured and lead to fistula formation.

DISCUSSION

Exposure and surgical manipulation of different structures of oral cavity were somewhat difficult per os. A mouth gag facilitates opening of the mouth and exposure of some rostral structures.

The available literatures lack any informations about buccotomy except the statement of kertes (1993) who stated several photographs demonstrating buccotomy incision as tool for tooth extraction in a horse. He stated that buccotomy incision affords direct vision to remove the buccal alveolar bone before sectioning the tooth and delivery of the segments. He added that the advantages of this approach are the safety of adjacent teeth and the simplicity of after care.

The suggested buccotomy operation may facilitate exposure and manipulation of oral cavity structures which are difficult to be managed per os. It facilitates surgical interferences with upper & Lower cheek teeth (rasping, shortening, filling, extraction and repulsion), gum (excision of epulis), tongue (suture of wounds, partial glossectomy and removal of neoplasm), hard palate (suture of cleft) and ostium of the Stenson's duct of the parotid salivary gland (cannulation).

The suggested seat for buccotomy incision was performed through the skin, buccinator muscle (muscular layer) ventral buccal salivary glands (glandular layer) & mucous membrane. The seat of operation was found safe where the buccal nerves and arteries which are running parallel to wound incision can be retracted and preserved without difficulty. It is also important to state here that the level of buccotomy incision must be at a mid point between the lines of attachment of the cheek to the mandible and maxilla. This prevent rupture of suture line which may occur due to active movement of the cheek muscles during mastication.

In conclusion buccotomy was considered a safe technique for manipulation of many structures in the oral cavity without any complications.

LEGENDS OF FIGURES

Fig.1: Buccotomy in buffaloes ;

A- Seat of buccotomy incision.

B- Exposure of upper and lower cheek teeth through buccotomy incision.

C- Cannulation of Stenson's duct of the parotid salivary gland through buccotomy incision.

D- Healing of buccotomy incision.

Fig. 2: Buccotomy in cattle :

A- Seat of buccotomy incision.

B- Incision through skin and s/c tissue during buccotomy.

C- Exposure of the upper and lower cheek teeth and tongue through buccotomy incision.

D- Healing of buccotomy incision.

Fig. 3: Buccotomy in sheep :

A- Seat of buccotomy incision.

B- Incision through skin and s/c tissue during buccotomy.

C- Exposure of the upper and lower cheek teeth through buccotomy.

D- Healing of buccotomy incision.

Fig.4: Buccotomy in goat :

A- Seat of buccotomy incision.

B- Exposure of the upper and lower cheek teeth through buccotomy.

C- Cannulation of Stenson's duct of the parotid salivary gland through buccotomy.

D- Healing of buccotomy incision.

Fig.5: Buccotomy in donkeys :

A- Seat of buccotomy incision.

B- Incision through skin and s/c tissue during buccotomy.

C- Exposure of the tongue through buccotomy incision.

D- Healing of buccotomy incision.

Fig.6: Buccotomy in donkeys :

A- Partial glossectomy .

B- Extraction of upper cheek tooth.

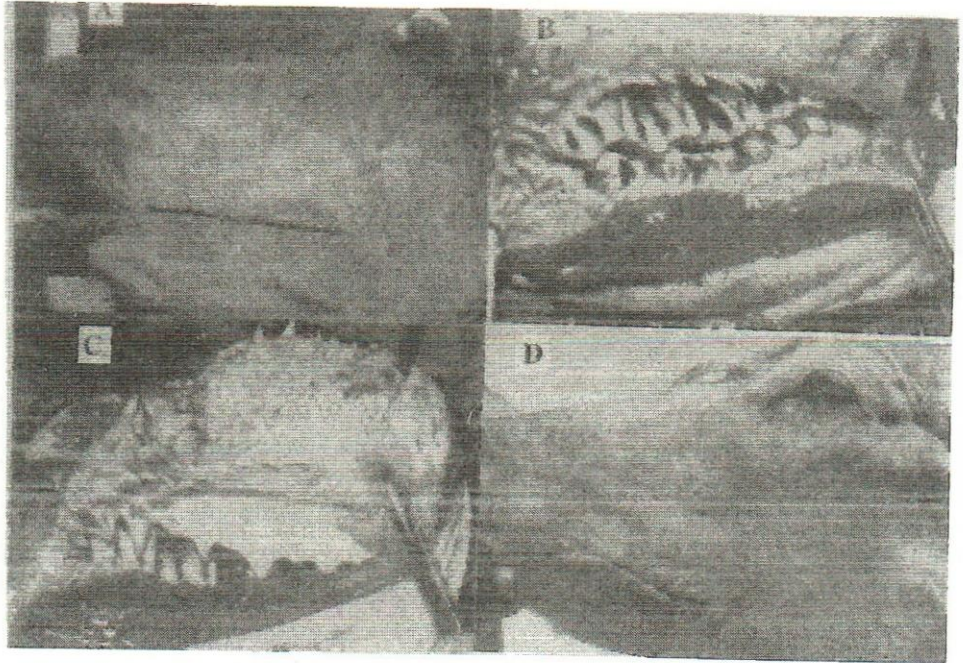
C- Cannulation of Stenson's duct of the parotid salivary gland.

D- Hard palate exposure through buccotomy incision.

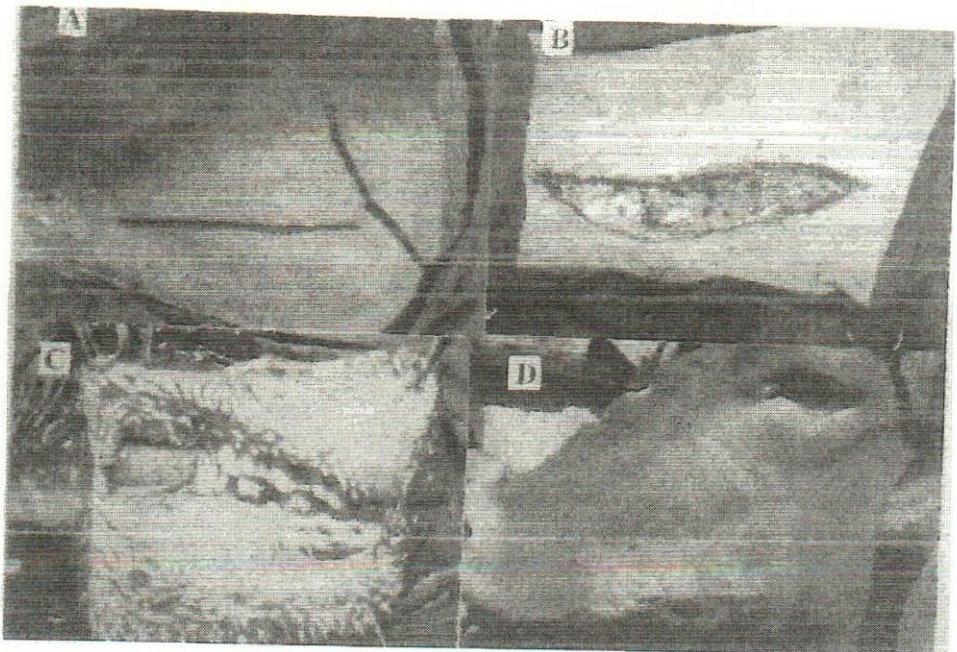
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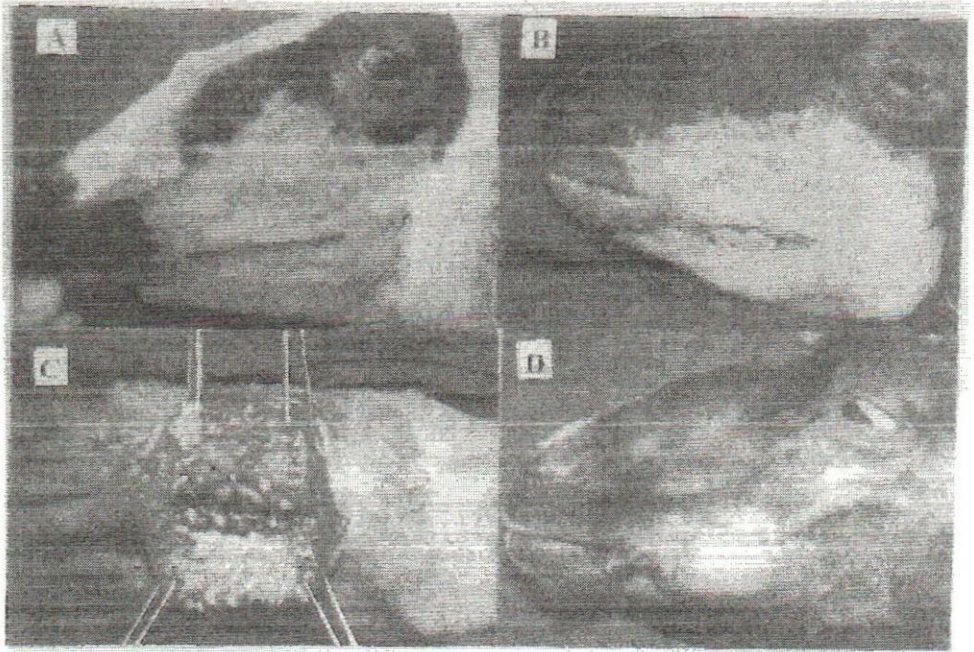
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