Oral choristoma in one and a half year-old ouden ewe: a case report
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Abstract
A one and a half year old ouden ewe was presented with a firm, solid mass on the inner lateral wall of oral cavity attached to the gingiva. Histopathological findings indicate oral choristoma. The condition was managed surgically by excising the mass, flushing the oral cavity with mild chlohexidine gluconate, administration of broad spectrum antibiotic, steroidal anti-inflammatory and multivitamin injection.

Keywords: choristoma, ewe, histopathology, oral cavity, ouden.

Introduction
Choristoma are tumor-like masses of normal cells or tissue that develops in an ectopic location (Neville et al., 1995). Several different tissue types may occur in the mouth as choristomas. These include bone, cartilage, gastric mucosa, glial tissue, and tumor-like masses of sebaceous glands (Chou et al., 1971). However the most frequently observed choristomas of the oral cavity are those that consist of bone (Shimoto et al., 1984; Tohill et al., 1987). These lesions have also been called soft tissue osteomas, but osseous choristoma is a more accurate term as the lesion that consists of bone. Krolls et al. (1971) used this term as he noticed that these lesions were not osteogenic in origin and not like masses of normal cells in an abnormal location. He used this term later to 'osseous choristoma' in 1971, which means a mass consisting of normal cells in an abnormal location. He used this term as he noticed that these lesions were not osteogenic in origin and not progressively enlarging like benign lesions (Kroll et al., 1971) Clinically, these lesions were described as a hard mass, either pedunculated or sessile (Andressakim et al., 2008). All lesions were treated by surgical excision with uneventful healing. Recurrence or malignant transformations were not reported.

Case report
A one and a half year old Ouda ewe weighing 24 kg was presented to the large animal clinic of Usmanu Danfodiyo University, Sokoto Veterinary Teaching Hospital with a complaint of swelling around the submandibular region (Plate I). The animal was purchased from Sokoto animal market five weeks earlier. The mass was small at the time of purchase but progressively increased in size overtime. On physical examination, the patient was slightly emaciated; rough hair coat and ingested feed were coming out through the oral commissure. The swelling was firm, warm to touch, fluctuated on palpation and measured 5x9.2cm² (Plate II). There were halitosis, ulceration of the oral mucosa, and dark coloration of both tongue and gingiva. The temperature, pulse and respiratory rates were within normal range. Fine needle aspirate yielded no fluid. Blood and fecal samples were taken for routine laboratory investigations. Tentatively, oral sarcoma was diagnosed. The ewe was evaluated for surgical excision of the mass. The patient was physically restrained on lateral recumbency with the affected side uppermost. The mass was small at the time of purchase but progressively increased in size overtime. On physical examination, the patient was slightly emaciated; rough hair coat and ingested feed were coming out through the oral commissure. The swelling was firm, warm to touch, fluctuated on palpation and measured 5x9.2cm² (Plate II). There were halitosis, ulceration of the oral mucosa, and dark coloration of both tongue and gingiva. The temperature, pulse and respiratory rates were within normal range. Fine needle aspirate yielded no fluid. Blood and fecal samples were taken for routine laboratory investigations. Tentatively, oral sarcoma was diagnosed. The ewe was evaluated for surgical excision of the mass. The patient was physically restrained on lateral recumbency with the affected side uppermost. The mass was small at the time of purchase but progressively increased in size overtime. On physical examination, the patient was slightly emaciated; rough hair coat and ingested feed were coming out through the oral commissure. The swelling was firm, warm to touch, fluctuated on palpation and measured 5x9.2cm² (Plate II). There were halitosis, ulceration of the oral mucosa, and dark coloration of both tongue and gingiva. The temperature, pulse and respiratory rates were within normal range. Fine needle aspirate yielded no fluid. Blood and fecal samples were taken for routine laboratory investigations. Tentatively, oral sarcoma was diagnosed. The ewe was evaluated for surgical excision of the mass. The patient was physically restrained on lateral recumbency with the affected side uppermost. The mass was small at the time of purchase but progressively increased in size overtime. On physical examination, the patient was slightly emaciated; rough hair coat and ingested feed were coming out through the oral commissure. The swelling was firm, warm to touch, fluctuated on palpation and measured 5x9.2cm² (Plate II). There were halitosis, ulceration of the oral mucosa, and dark coloration of both tongue and gingiva. The temperature, pulse and respiratory rates were within normal range. Fine needle aspirate yielded no fluid. Blood and fecal samples were taken for routine laboratory investigations. Tentatively, oral sarcoma was diagnosed. The ewe was evaluated for surgical excision of the mass. The patient was physically restrained on lateral recumbency with the affected side uppermost. The mass was small at the time of purchase but progressively increased in size overtime. On physical examination, the patient was slightly emaciated; rough hair coat and ingested feed were coming out through the oral commissure. The swelling was firm, warm to touch, fluctuated on palpation and measured 5x9.2cm² (Plate II). There were halitosis, ulceration of the oral mucosa, and dark coloration of both tongue and gingiva. The temperature, pulse and respiratory rates were within normal range. Fine needle aspirate yielded no fluid. Blood and fecal samples were taken for routine laboratory investigations. Tentatively, oral sarcoma was diagnosed. The ewe was evaluated for surgical excision of the mass. The patient was physically restrained on lateral recumbency with the affected side uppermost. The mass was small at the time of purchase but progressively increased in size overtime. On physical examination, the patient was slightly emaciated; rough hair coat and ingested feed were coming out through the oral commissure. The swelling was firm, warm to touch, fluctuated on palpation and measured 5x9.2cm² (Plate II). There were halitosis, ulceration of the oral mucosa, and dark coloration of both tongue and gingiva. The temperature, pulse and respiratory rates were within normal range. Fine needle aspirate yielded no fluid. Blood and fecal samples were taken for routine laboratory investigations.
Plates I: The patient at presentation, with oral mass (arrow)

Plate II: Ewe with subcutaneous thick mass

Plate III: Surgical exposure of the mass (arrow)

Plate IV: The skin closure with ford-interlocking suture patterns (arrow)

Plate V: Photomicroscopic appearance of the mass with collagen deposit (CD) and neutrophilic infiltrates (NI) suggestive of microscopic features of skin with normal mitotic index x200 stained with H&E

Plate VI: Photomicroscopic appearance of the mass Collagen fibres (CF) suggestive of skin microscopic skin feature with normal mitotic index x200 stained with H&E
transected mass was then preserved in 10% buffered formalin solution for histopathological examination. The skin was closed with Agary® nylon size 0, atrumatic; 1/4 curved cutting needle (Agary Pharmaceutical LTD, Xinghuai, China) using ford-interlocking suture pattern (Plate IV).

Post surgically, the following treatment was instituted: Penstrept injection (Aether Centre, Beijing, Biologic Co., LTD) procaine penicillin 200mg and dihydrostreptomycin 250mg at dose rate of 20,000 IU/kg and 10 mg/kg respectively intramuscularly for five days, 0.2% dexamethason injection (Aether Centre, Beijing, Biological Co., LTD) at 2 mg/kg intramuscularly for two days, multivitamin injection (Aether Centre, Beijing, Biological Co., LTD) 3ml intramuscularly for five days and daily dressing and flushing of the surgical site for seven days.

Histopathological section of the mass revealed normal cell morphology at abnormal site, the mitotic index were within normal rage microscopic features observed were inflammatory infiltrates, collagen deposit and collagen fiber, suggestive of skin located in an abnormal site (Plate V and VI). Based on the histopathological finding, diagnosis of choristoma was made. The patient was hospitalized throughout the period of treatment; it was discharged after sutures were removed at day 14 post surgery.

Discussion
Choristoma is histologically an island of normal tissue that occurs in an abnormal location. In contrast, a hamartoma is a mass composed of histological normal cells in an anatomically normal location (Steinbach et al., 2004).

The pathogenesis of lingual choristoma is still uncertain but it is not a debatable entity because its existence is well recognized (Vered et al., 1998). Several theories have tried to explain the pathogenesis of these lesions. In general, these theories can be divided into two main categories; the developmental malformation theory and the reactive (posttraumatic) theory (Kroll et al., 1971; Supiyaphun et al., 1998).

References


Kroll SO, Jacoway JR & Alexander WN (1971). Osseous choristomas (osteomas) of intraoral soft tissues. The first developmental theory is based on the anatomic location of the lesion in the foramen cecum. Embryologically, the anterior two-thirds of the tongue originate from the first branchial arch and the posterior one-third originates from the third branchial arch. The union takes place in the region of the foramen cecum and the sulcus terminalis. Both of these arches also give rise to normal bony structures such as the middle ear bony ossicles and the hyoid bone. Therefore, it was suggested that pluripotential cells from these branchial arches might give rise to these osseous lesions (Benamer and Elman, 2006). Supiyaphun, et al., (1998) reported that, the second developmental theory is associated with remnants of thyroid tissue. The foramen cecum is the site of the development and the descent of the future thyroid gland in the neck and it was suggested that the remnants of the undescended thyroid tissue might produce osseous proliferating lesions later in life.

The reactive (posttraumatic) theory is based on the fact that there is frequent and constant irritation by different lingual activity such as swallowing and articulation. This frequent trauma can lead to local inflammation, similar to what happens in the case of ‘myositis ossificans’. However, this theory cannot explain the formation of fully developed bone with the haversian system and not the zonation seen in myositis ossificans (Vered et al., 1998).

We reported a case from an ewe with an oral choristoma that closely resembles a hamatoma described in literatures. To the best of our knowledge this is the first report of choristoma in animal in Sokoto. We recommend histologic sectioning of all mass grossly suspected to be neoplastic in nature for proper and accurate diagnosis.

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