Clinical case: Congenital lipomatosis in a Brown Swiss calf

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SUMMARY

A one-day old, female, Brown Swiss calf was diagnosed multiple subcutaneous and abdominal lipomatosis. Subcutaneous tumors were localised on the left site of thorax, under the left eye and above the sacrum. Abdominal tumors were around the left kidney and aorta. Multiple nodular tumoral masses were observed on mesentery and mesometrium. In addition to sublingual salivary gland hyperplasia, jaw deformity due to hyperplasia were observed.

Keywords: Congenital tumor - lipomatosis - calf.

Introduction

Lipomas are neoplasms of well-differentiated lipocytes and lipoblasts. These tumours are most common in dogs and are uncommon in other species [1, 2, 9]. Neoplasms of adipose tissue rarely occur in adult cattle and are usually single and localised in abdominal cavity. Incidence of subcutaneous lipomas appears to be quite low and usually reported in adult cattle [4]. Predominantly subcutaneous lipomas occur most commonly in the trunk, gluteal region and proximal limbs in animals [3, 7, 8]. There is only one report about facial localization of lipoma in calves [2].

The incidence of neoplasms increases with age in all species [1, 3, 5, 8]. Documented accounts for neoplasia in newborn animals are relatively rare. Little information is available on congenital lipomas in calves [2, 4, 6-8]. Lipomas in calves localized either abdominally or subcutaneous, but combination of these localisations in a same animal was not previously reported. In this study, multiple subcutaneous and abdominal congenital lipomatosis was observed in a calf. Subcutaneous tumours were observed in the facial, thoracal and sacral areas.

Case Definition

A one-day old Brown Swiss calf was admitted to the veterinary medical teaching hospital because of a sublingual mass and deformity of the jaw and multiple subcutaneous masses. At the clinical examination of the calf, exophthalmos, jaw deformity and inability to the suck were observed (figure 1). Multiple subcutaneous masses were also observed on the left site of thorax, under the left eye and above the sacrum. After clinical examination, surgical removal of the masses was decided, but because of infiltration of surrounding tissue by the tumoral masses, euthanasia was decided during operation and necropsy was performed afterwards.

Necropsy Findings

At the examination of the abdominal cavity, left kidney was covered by a whitish-yellow big tumoral mass, which was coarsely lobulated and soft (figure 2). The left kidney was smaller than the right one (figure 3). Multiple small nodular masses, which had the same appearance were seen around the aorta thoracica and aorta abdominalis, and in the mesentery and mesometrium.

RéSUMÉ

Cas clinique : lipomatose congénitale chez un veau de race Brune des Alpes. Par O. OZMEN.

Un cas de lipomatose caractérisé par la présence de plusieurs tumeurs sous-cutanées et abdominales a été observé chez un veau femelle âgé de 1 jour, de race Suisse Brune. Les tumeurs sous-cutanées étaient localisées sur le côté gauche du thorax, sous l’œil gauche ainsi que sur le sacrum. Les tumeurs abdominales étaient situées en périphérie de l’aorte et autour du rein gauche. Plusieurs masses tumorales nodulaires ont été également observées dans le mésentérium et le mésométrium. De plus, l’hyperplasie de la glande salivaire sublinguale a entraîné une déformation de la mâchoire.

Mots-clés : Tumeur congénitale - lipomatose - veau.
HISTOPATHOLOGICAL FINDINGS

Tissue samples, which were taken from all the masses during the necropsy were fixed in 10% buffered formaldehyde. Following the routine procedure, tissues were blocked in paraffin and cut 5µ thickness and then stained with hematoxyline-eosin (HE) and examined microscopically. All tissues except the tissue taken from the sublingual mass have floated in formalin, indicating the presence of fat. Tissue sections, which were cut with frozen microtome were stained with Oil Red O method.

The sublingual mass was histopathologically diagnosed as salivary gland hyperplasia and fibromatous proliferation of connective tissue. The fibrous tissue was very edematous but no inflammatory cell infiltration was observed.

Subcutaneous and abdominal masses were diagnosed as lipoma. Microscopically tumours consisted of well-differentiated fat cells with no pleomorphism and anaplasia (figure 4). Mitotic figure was not found. The cells have single big fat vacuoles in the cytoplasm. The fat was demonstrated in frozen sections with Oil Red O in all subcutaneous and abdominal tumours (Fig.5). Subcutaneous tumours were not encapsulated and infiltrations were seen into the muscle especially for thoracal mass. Some of the muscle cells were degenerated and atrophic due to infiltrations of tumoral mass. The fat cells were supported by scanty stroma, which condenses to form septa dividing the tumour into lobules in the abdominal cavity. The tumour that surrounded the left kidney did not penetrate this organ.
Discussion

Congenital tumours are rare in cattle. They mainly include peritoneal mesothelioma, melanoma, and nephroblastoma [3, 5]. However, the cases of lipomatosis are occasionally observed in the abdominal cavity of adult cattle, and they are very seldom in calves [3, 4, 6, 9]. Moreover, subcutaneous localisations of lipomas are rarely observed in cattle [3, 4]. Despite the multiple localisations of tumour masses in this calf, no malignant feature was evidenced by histopathological examination in the present report. All of the described tumours were lipoma except sublingual one.

Few literature reports on lipomatosis in calf were available. Only one case of fibrochondrolipoma [5] and four cases about congenital lipomatosis, particularly with abdominal localisation [2, 6-8] were previously described. In the present clinical case, all of the tumours except sublingual mass localised both subcutaneously and abdominally were originated from only the adipose tissue. No combination was observed with the other mesenchymal tissues. Although dystocia or caesarean could be induced by foetal tumours [7, 8], no dystocia has occurred and the calf delivered normally.

In conclusion, this report evidenced an unique neonatal combination of subcutaneous and abdominal lipomatosis with multiple origins in the same calf associated with salivary gland hyperplasia and jaw deformity. The aetiology of the tumours is unknown.

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References