ANATOMY OF A TETRAMELIA CASE IN BOVINE SPECIES

CELIA RIVERA FONTÁN

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INTRODUCTION

Limb development is a complex process that involves the expression of different factors and genes. Congenital anomalies affecting the limbs in domestic animals occur relatively often. However, tetramelia, characterized by the complete absence of the four limbs, is not seen that frequently.

OBJECTIVES

The aim of this study is to analyze the anatomic alterations in the foetus, compare them with similar cases in animal and human species, and to pose the possible causes of the anomaly. Furthermore, the research focuses on understanding the conditions in which tetramelia shows.

Figure 1: *Bovine foetus with tetramelia*

MATERIALS AND METHODS

A bovine foetus with tetramelia (Figure 1) was studied by performing:

- A computed tomography with a 3D reconstruction of the skeleton (Figure 2).
- The dissection of the muscles in the cervicothoracic region, the brachial plexus and the organs in the thoracic, abdominal and pelvic cavities.

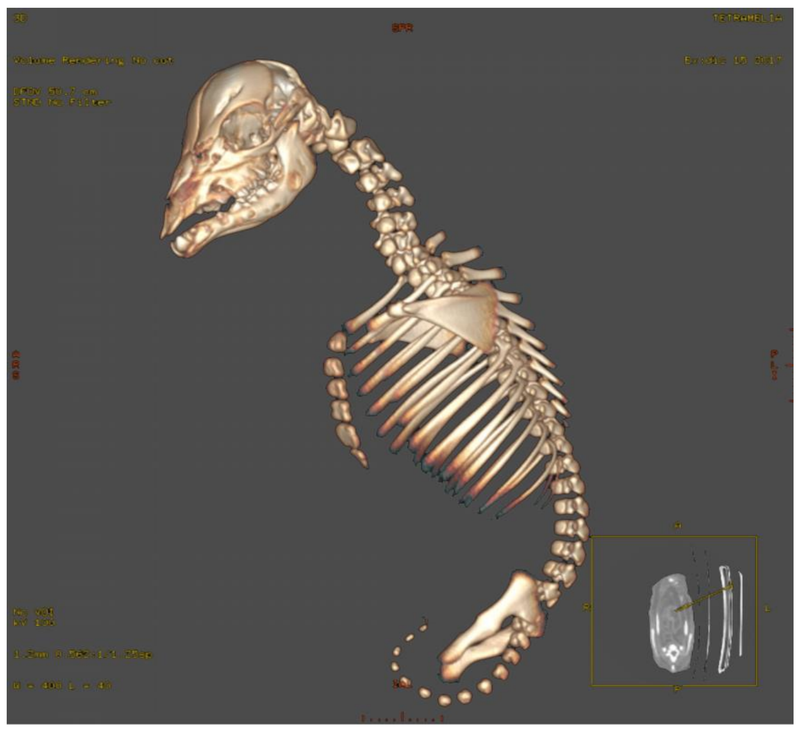

Figure 2: *3D reconstruction of foetus skeleton (lateral view)*

RESULTS

- Muscles in cervicothoracic region come together in a double fascia system.
- Cardiovascular, pulmonary, digestive and urogenital systems were normal, except for the hypoplasia of the left kidney.
- Lack of limb bones except scapulae and coxae.
- Agenesis of left parietal bone.

CONCLUSIONS

- ✓ The isolated presentation of tetramelia is rare, usually involving malformation in other organic systems. Nevertheless, in our case this affectation is minimal.
- ✓ Characteristics in presentation of tetramelia varies within the studied cases, therefore finding just one genetic factor is complicated.
- ✓ Actual studies focus on investigating the cause of tetramelia in the human species. Regarding the cases in bovine species, it would be useful to do a deeper study of the main causes and an analysis of their genome.