TITLE: Absence of *Lactobacillus sp* in the establishment of fecal microbiota in a child with Robin Sequence

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ABSTRACT

The events happening during bacterial colonization of the gastrointestinal tract may compromise the health of the host, especially in individuals with Robin Sequence (RS), who require special care during the first months of life for full rehabilitation. The RS is described as a triad of anomalies in which the child presents micrognathia and glossoptosis with or without associated cleft palate, resulting in airway obstruction with variable respiratory difficulty and feeding difficulties that are more frequent and severe in the neonatal period. Using real time PCR (qPCR) to detect and quantify the bacteria of the genera *Lactobacillus sp* and *Bifidobacterium sp*, the present study analyzed part of the fecal microbiota (FM) of a female child with RS, born by C-section, of middle high socioeconomic status, admitted for specific treatment at the Hospital for Rehabilitation of Craniofacial Anomalies, University of São Paulo, Bauru, SP, Brazil. The child presented U-shaped cleft palate, severe glossoptosis and micrognathia. During hospitalization, from 20 to 86 days of life, she received treatment for pertussis and high calorie diet; absence of breastfeeding; utilization of nasogastric and nasopharyngeal probe; and received blood transfusion. At one year of age, the child was healthy and returned to HRAC-USP to undergo palatoplasty. Samples of feces were collected between April 2012 and April 2013, at the first (M1) and third (M2) months of life, and at twelve months of life before palatoplasty (M3) and three days after palatoplasty (M4). This work revealed an imbalance in the establishment of FM, since *Lactobacillus sp* was not detected at any time of the analysis. The number of copies per milligram of feces DNA of genus *Bifidobacterium sp* was $1.5x10^8$ in M1, $4.8x10^8$ in M2, $3.8x10^{10}$ in M3 and $9.3x10^7$ in M4. This study demonstrated that the specific treatment for the rehabilitation of children with RS influence the establishment of FM, with a marked decrease of *Bifidobacterium sp* after palatoplasty, after palatoplasty, and no colonization of *Lactobacillus sp*. The knowledge of how the intestinal microbiota establishes in children with RS could help to prevent future intestinal desorders.

Keywords: Robin Sequence; Fecal Microbiota; *Lactobacillus sp*