Repeat breeding represents 74% of complaints in female South American Camelids seen at the Theriogenology Service at Washington State University, and of those, ovarian hypoplasia and chromosomal abnormalities represent the majority of diagnoses in nulliparous females. A three year old, 61.4 kg, Huacaya alpaca was presented for infertility. She had been bred multiple times over one year to two fertile males, with no resultant pregnancies and had been examined by several veterinarians with no diagnosis. Transrectal ultrasonography demonstrated a small uterus with small, inactive ovaries. Serial ultrasonography was performed over nine days, with no follicular development observed. The cervix was easily catheterized and uterine cultures were negative for pathogenic organisms. Laparoscopic examination confirmed the diagnosis of ovarian hypoplasia, with each ovary 3 mm in diameter with no follicular development. Cytogenetic evaluation of peripheral lymphocytes demonstrated a karyotype of 74,XX/74,XY. Chromosomal abnormalities are a common cause of ovarian hypoplasia in camelids. However, in this case, presence of the Y chromosome cell line suggests the possibility that this female, although born singleton, may have been co-twin to a male which perished in utero. A case of freemartinism in a llama has been previously reported, born co-twin to a male. This case exemplifies how diagnosis of the cause of infertility can often only be confirmed using advanced techniques, and that birth of a singleton cria should not rule out chimerism or freemartinism. Furthermore, owners of female camelids which are repeatedly bred without conceiving should seek veterinary examination, as females with ovarian hypoplasia will not reject the male, and repeated breeding becomes a welfare issue.

**Keywords:** Cytogenetics, karyotype, laparoscopy, freemartinism, camelid

**References**