

## **OVARIAN CYSTS, A FETAL FEATURE IN MAMMALS, ARE CONSTITUTIONALLY PRESENT IN THE ADULT ARMADILLO**

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### **RESUMO**

Prenatal mammalian oogenesis is characterized by several crucial developmental steps. In mammals, cyst break down (CBD) ends at the time of, or soon after, birth with the formation of primordial follicles enclosing single oocytes, which constitute the sole reservoir of gametes available through the whole female's reproductive life. CBD and primordial follicle formation are concluded by or at around the time of birth and cysts persistence in the adult mammalian ovary is considered an atypical condition. In the present study, we challenge this paradigm bringing evidence of the constitutional presence of a large number of cysts in the ovary of the adult armadillo *Chaetophractus villosus*, a species belonging to the superorder Xenarthra. From ovaries of adult individuals of *C. villosus*; (that were captured during 2007–2016; Loma Verde, Province of Buenos Aires, Argentina) fixed in 10% formalin or bouin ( $n = 50$ ), and in glutaraldehyde ( $n = 8$ ); techniques of conventional histology, immunohistochemistry and transmission electron microscopy were performed. This study is the first to demonstrate the constitutional presence of Germ Cell (GC) cysts in the adult ovary of a placental mammal and describe that (a) Germ Cells (CGs) enclosed within cysts are connected by intercellular bridges—in markers of their clonal origin; (b) CBD occurs through four main phases, ending with primordial follicles containing single oocytes; (c) GCs encompass meiotic prophase I stages, from leptotene to diplotene; (d) seasonal variations in the number of GCs enclosed within cysts, suggesting the presence of a GC multiplying activity. The armadillo *C. villosus*'s ovary emerges as an extraordinary resource to investigate folliculogenesis and to explore the evolutionary past of the Xenarthra and mammals ovary.

**PALAVRAS-CHAVE:** *C. villosus*, Germ Cells, Meiosis, Ovary

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