

Spina bifida occulta associated with environmental arsenic exposure in a prehispanic sample from northern Chile Evaluación de la frecuencia de espina bífida oculta y su posible relación con el arsénico ambiental en una muestra prehistórica de la Quebrada

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Background: The Camarones River Valley, located in the extreme north of Chile, is characterized by high environmental arsenic levels and an arid desert. It has been inhabited by humans for the past 7,000 years. Evidence exists for chronic arsenic poisoning in both prehispanic and present populations residing in the area. Chronic arsenic exposure causes multi-systemic problems and can induce congenital malformations, in particular neural tube development defects such as spina bifida.

Aim: To study the prevalence of spina bifida among prehispanic mummies of the area. Material and

Methods: One-hundred and twenty prehistoric adult individuals were analyzed for evidence of spina bifida occulta of the sacrum in skeletal samples from the sites of Camarones 8, Camarones 9, Azapa 140 and Lluta 54, held in repository at the Museo Universidad de Tarapacá de Arica-San Miguel de Azapa. A diagnosis was considered positive when at least S1, S2 or S3 were affected. As controls, mummies of individuals