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# CT scans of pathological cranial fragments from neolithic Switzerland: a differential diagnosis.

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## Résumé

A project is currently underway to establish a paleoepidemiological profile of the neolithic population of Western Switzerland (7 sites, 620 individuals), dated from the middle Neolithic to the Bell Beaker culture. The aim is to observe all bones present for pathological lesions, propose a diagnosis for these lesions whenever possible, and establish disease frequencies for this region for the chronological interval studied.

The necropolis of Barmaz is situated in the High Rhone valley, in Switzerland, and dates from the middle Neolithic (4500 – 3800 BC). It contains 59 tombs, some dug directly in the ground and some of the cistes Chamblandes type. Some of these graves contained more than one individual, bringing the total population for the necropolis to 77.

Tomb T16 (middle Neolithic I, 4300 – 4100 BC) contained a single individual, R16, represented by three cranial fragments. These present obvious pathological signs: unusual thickness, bone organisation that differ from the norm, porosities. As a result, a CT-scan investigation was conducted in order to narrow down possible diagnoses.

From the CT-scan and comparison with the literature, three possible diagnoses are submitted for consideration: Paget's disease, metastatic disease, and thalassemia/severe anaemia. The diagnosis remains open. These results are significant; indeed, no matter which of the diagnosis is the right one, it would be the first case identified in the neolithic population of Western Switzerland.

**Mots-Clés:** paleopathology, CT scans, neolithic Switzerland, Paget's disease, metastatic disease, thalassemia

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