

Aplasia of the Posterior Arch of the Atlas : A Proposal for a New Clinical Classification

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Abstract: Partial or complete aplasia of the posterior arch of the atlas is often detected incidentally when a patient has cervical X-rays. Patients with this anomaly are generally asymptomatic. However, some cases demonstrate neurological symptoms. It is important to predict cases of this anomaly that may be accompanied with neurological symptoms. Between April 2001 and March 2005, three patients were encountered who had an anomalous posterior arch of the atlas. The anomalies encountered in the three patients were midline cleft (two patients) and an absence of the posterior arch with persistent posterior tubercle (one patient). Based on our clinical experience and a review of the literature, we developed a new clinical classification system for this condition. From a clinical point of view, aplasia of the posterior arch of the atlas can be classified into three types. Type I is complete aplasia. Type II is partial aplasia with the isolated posterior fragment. Type II is divided into subtypes depending on the inward mobility of the isolated posterior fragment (Type II-a without and Type II-b with mobility). Type III is partial aplasia without the isolated posterior fragment. Our new classification is simple and unambiguous, and it also provides a clear direction for developing appropriate diagnostic and treatment strategies.

Key words : Cervical spine, Atlas, Arch, Anomaly, Classification