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AN UNUSUAL CASE OF SUBLUXATION OF C.3–C.4

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A case is reported of spontaneous subluxation of C.3 on C.4 in a 6-year-old boy due to an upper respiratory infection after surgical treatment for muscular torticollis.

Key words: cervical subluxation; cervical infection; torticollis

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Simultaneous subluxation of the upper three vertebrae due to upper respiratory infection combined with minor trauma has been reported before by Wilson et al. (1940), Hunter (1968) and others. To the best of our knowledge, subluxation at the level below C.3 due to the above-mentioned reason, particularly during the period of treatment for muscular torticollis, has never been recorded.

CASE REPORT

T.W., a 6-year-old boy, who was born after a normal pregnancy by a vertex delivery using forceps on the head, was observed to have a sterno-mastoid tumour on the left side a few days after birth. Nobody noticed any abnormality until he was 5½ years old, when his parents suddenly became aware of his tendency to hold his head tilted to the left side. On examination he appeared a fit young boy. However, examination of his neck revealed a torticollis due to a very tight clavicular head of the left sterno-mastoid muscle. It was also noted that there was some facial asymmetry. Figure 1 shows the preoperative X-ray of the cervical spine. He was admitted to the Nuffield Orthopaedic Centre and formal release of the sternal and clavicular heads of the sterno-mastoid was carried out. Postoperatively he was immobilized in a Minerva-type plaster-of-Paris in the over-corrected position for a period of six weeks followed by four weeks gentle physiotherapy. While he was in the plaster, there were two occasions when he had upper respiratory infections complicated by right otitis media which were treated with antibiotics by his doctor. He had had similar

Figure 1. Lateral X-ray of cervical spine prior to surgery.

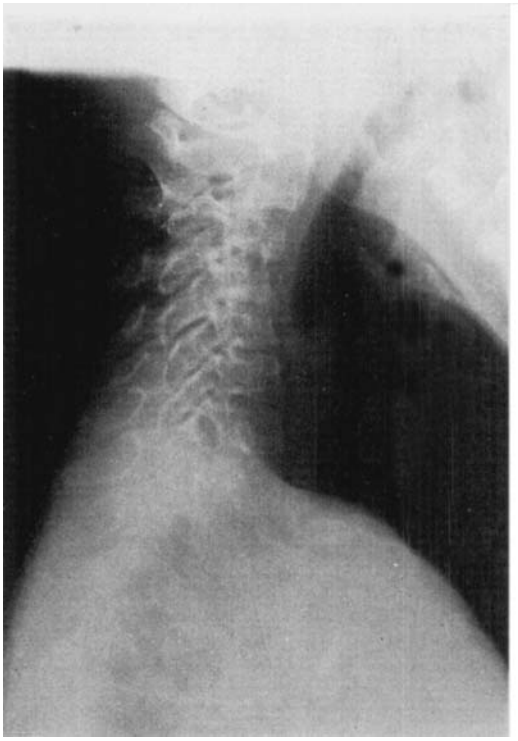

Figure 2. Lateral X-ray of cervical spine 12 weeks after surgery and 6 weeks after removal of the Minerva plaster cast.

Figure 3. The subluxation reduced and held in a collar.

infections on a number of occasions in the past. Six weeks after removal of the Minerva plaster he presented in the Outpatient Department complaining of pain in his neck, and with his head held in flexion. X-ray pictures of the cervical spine showed an anterior subluxation of C.3 on C.4. (Figure 2). He was readmitted to the Nuffield Orthopaedic Centre, his subluxation was easily reduced with cervical traction (Figure 3) and was thereafter held for six weeks in a plaster collar.

DISCUSSION

Sore throat and upper respiratory infection combined with some sort of injury, sometimes even a minor one, can cause subluxation of the cervical spine in children. A. Wittek (1908) was the first to mention this disorder in reporting a case of spontaneous atlanto-axial subluxation and he suggested that a "metastatic effusion" into the joint distended the ligaments of the atlanto-axial joint. His explanation was accepted later by E. J. Berkheiser & F. Seidler (1931), M. J. Wilson et al. (1940) and A. W. Sullivan (1949). Many others have reported cases of subluxation of C.1 on C.2, or C.2 on C.3 or combinations of these (B. Eriksson (1960), G. A. Hunter (1968) and A. B. Ferguson (1975)). The inherently unstable nature of the atlanto-axial joint and the nearly horizontal attitude of the upper cervical facet joints has been used to explain the localization of the disorder to these levels. In our case, the C.3–C.4 level was involved and it is also unique in occurring after surgical treatment for muscular torticollis.

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