15 Degenerative Joint Disorders, Including Condensing Osteitis

Stephen P. Harden and Richard M. Blaquier

Contents

15.1 Introduction ............................................................... 177
15.2 Osteoarthritis of the Sternoclavicular Joint ........................ 177
15.3 Condensing Osteitis .................................................. 181
15.4 Conclusions ........................................................... 190
References ................................................................. 190

15.1 Introduction

This chapter concentrates on osteoarthritis (OA) of the sternoclavicular joint (SCJ), the archetypal degenerative joint disease and the commonest condition to affect this joint. It also covers the rather controversial topic of condensing osteitis of the clavicle. Although some authors have suggested that this condition would be better termed post-traumatic clavicular sclerosis, it is now widely accepted that it is most likely to be a degenerative process. It is still not clear whether all or any of these patients subsequently develop OA of the SCJ.

15.2 Osteoarthritis of the Sternoclavicular Joint

Osteoarthritis is the most frequently identified disorder of the SCJ. Osteoarthritic changes are seen increasingly commonly with age. Kier et al. [12] performed block dissections of 55 SCJs in consecutive autopsy specimens and then performed high-resolution PA radiographs and subsequently a histological assessment to determine the severity of OA present. Some degenerative changes were identified in
50% of patients under 40 but, in comparison, were found in 97% of patients over 60. Moderately severe degenerative changes were present in only 12% of patients under 40 compared with 33% of patients over 60, while severe changes were present in no patients under 40 and 20% of those over 60. The changes were typically bilateral but often asymmetrical.

In addition to advancing years, there may be an identifiable cause of SCJ osteoarthritis. The SCJ can be involved in patients with systemic or primary OA. Arlet and Ficat [2] found clinical evidence of OA in 21 of 25 patients with generalised systemic OA. In other patients, repetitive trauma may produce a monarthritis. This may be seen in manual labourers and in those playing a lot of racket sports. There is some evidence that degenerative changes in these patients are most prominent on the side of the dominant hand [2]. Yood and Goldenberg [24] reported 18 cases of SCJ monarthritis in patients aged 20–50 years. Most of these patients were manual labourers and all of them had monarthritis on the dominant hand side. Other studies have not reliably demonstrated a strong link with dominant handedness [12]. The third group of patients with a definitive cause are those with a history of a single traumatic event, such as dislocation, subluxation or periarticular fracture [16]. Finally, there is some evidence that other conditions of the SCJ region may produce OA. These include condensing osteitis, previous joint infection and other systemic arthritides, but in all of these cases OA is not an inevitable consequence.

Patients presenting with symptomatic OA of the SCJ tend to be in or beyond the sixth decade of life. The principle symptom is local pain and this has often been present for many months or years. The pain is usually aggravated by abduction of the arm and by forward elevation of the arm above the horizontal. Swelling of the SCJ is usually present. An irregular bony prominence may be palpable and crepitus may be detected in severe cases. However, it remains surprising that patients may remain asymptomatic even with quite advanced degenerative changes. Inflammatory markers are almost invariably normal irrespective of symptoms.

The plain radiograph is usually the initial imaging investigation and this demonstrates the typical features of OA seen in most other joints. These comprise joint space narrowing, subchondral sclerosis, osteophyte formation and subchondral cysts. Kier et al. [12] found a good correlation between radiographic abnormalities and histological changes. Although sclerosis, cysts and osteophytes can be found on either side of the joint, the commonest site for these changes is the articular surface of the inferomedial clavicle [2, 12]. Osteophytes are particularly common here and are much less frequently identified at the superior clavicular surface or the sternal surface of the SCJ. There may also be partial or complete ossification of the costal cartilage of the ipsilateral first rib. However, Kier et al. [12] felt that this was more likely to represent part of the normal ageing process rather than being directly linked to OA of the SCJ as there was no significant correlation with the