fistula or sinus or recurrence or persistence of infection. Surgical management included incision and drainage alone, incision—drainage and curettage or SCJ resection. The type of the surgical management depended on various factors including the initial presentation of the patient, the patient’s general condition, radiological findings and recurrence after initial management.

We preferred to start with the least invasive surgery in those patients with poor general conditions, as most of them present with advanced stages of CRF or DM or they were drug addicts. Fig. 4 demonstrates the algorithm we propose in the management of SCJ infection. After resection of SCJ, the wound was closed primarily in most of the cases without encountering any problem and with good cosmetic results. We did not need reconstructive manoeuvre in those patients who underwent SCJ resection. There was no restriction in shoulder movements at follow-up. All patients are doing well without symptoms or recurrence of infection.

5. Conclusion

In conclusion, we found that surgery is indicated in cases of SCJ infections after failure of antibiotic therapy trial. The type of the operation depends on the general condition of the patient, and the presence or absence of osteomyelitis. SCJ resection is indicated when there is recurrence of infection, sinus formation, severe osteomyelitis and when there is no response to the other forms of surgical treatment. The newly proposed classification and algorithm of management for SCJI could be of help for thoracic and orthopaedic surgeons in both diagnosis and management of this rare disease.

References


Editorial comment

Surgical management of sternoclavicular joint infection

The recently published article by Arab and colleagues (Ref. [1], in this issue) permits us to discuss sternoclavicular joint infection (SCJI), which is an uncommon and not well-known local infectious disease. Usually occurring in chronic debilitating conditions, after local traumatism or following head-and-neck surgery, it might occur in healthy patients in nearly a quarter of cases [2]. Progression might be locally pejorative with complete joint destruction and mediastinal septic contamination. The particular topography of this joint at the cervicothoracic junction and the complexity of this joint partly explain the heterogeneity of care given by different specialists, with different practices. Misdiagnosis and high failure rate of medical therapy are frequently reported in this pathology, including several clinical stages never well defined up to now. For a long time, unrecognized and confused with other joint pathologies, SCJI was first described by Arlet and Ficat in 1958.
with two cases cured by radical resection. Since then, publications in literature mainly reported some cases by orthopedists, internists, ear—nose—throat (ENT) specialists, and thoracic surgeons. None of the published cohorts of patients were sufficiently defined and propose clear guidelines. This lack of recommendations leads to controversies in the therapeutic strategies for a spectrum ranging from simple inflammatory arthritis to real septic arthritis of the joint. Success or failure observed with different treatment methods ranging from antibiotic alone to radical resection is probably explained by non-equivalent stages of the disease at the time of diagnosis. Basic surgical treatment is based on complete removal of necrotic tissue. Current indications mostly concern SCJIs at a late stage of disease with local complications, including joint destruction [2]. Complete joint resection is proposed in such cases for better control of the infection, but significant morbidity mainly regarding the shoulder range of motion is frequently observed. A better definition of the criteria to select appropriate candidates for surgery and to choose the type of surgery should be proposed, appearing an essential step in the management of the disease.

In the multicentric retrospective study of Arab and colleagues (Ref. [1], in this issue), patients with SCJs were classified in several stages according to the degree of joint, bone, and soft tissue involvement. All patients in this series underwent surgery after a previous treatment failure. In 64% of cases, complete SCJ resection was done. In case of local extension into soft tissue outside bone and joint, use of ipsilateral pectoralis major muscle flap was reported by Roos and Shamsuddin [2]. There was no flap placement in Arab’s series and no failure was observed. The authors suggest that a less invasive surgery might be chosen in patients with poor general conditions. In our center in Paris, we chose a different approach, consisting of eradicating the septic source as effectively and rapidly as possible. Radical joint resection is an efficient strategy when extended disease presents with no incapacitating consequences. It avoids repeated surgical procedures and persistence of an uncontrolled underlying infection. However, this radical strategy is not ideal in the case of less extended local disease.

The originality of Arab’s study (Ref. [1], in this issue) is in proposing an algorithm to help therapeutic decision. That algorithm is based on objective clinical and radiological criteria. Its application looks easy. Computed tomography (CT) scan or magnetic resonance imaging (MRI) is an essential tool to define the extent of the disease, and standard radiography seems useless, as lesions are not visible in 35% of cases (Ref. [1], in this issue).

The five grades defined by Arab and colleagues are clearly defined even if it may be difficult to differentiate minimal and moderate swelling. The different decision levels of this algorithm need a systematic reevaluation due to results obtained before deciding on a more intensive treatment.

This new classification elaborated by Arab and colleagues will certainly allow to compare treatments proposed for SCJs, avoiding the controversies between supporters of minimally invasive treatment and those supporting maximalism. It should be prospectively used by the teams to be validated or modified in the next few years, thus representing a first interesting step in the classification of a rare pathology like SCJI.

References


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