Current Problem Case / Der aktuelle Problemfall

Excisional Biopsy for Bone Tumours

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Summary. Compartmental muscular resections without open biopsy is a common procedure for soft tissue tumours suspected of malignancy. In bone tumours, where the diagnosis is supposed to be sarcoma, an excisional biopsy is seldom possible without severe reconstructive problems and it may be unnecessarily mutilating should the tumour be benign. For the fibula, the clavicula, metatarsal and metacarpal bones, the distal third of ulna and the proximal third of radius, however, excisional biopsy as the primary procedure should be taken into account. The resulting loss of function is minor and can well be accepted even if the tumour turns out to be benign. On the other hand, if it is malignant as supposed, the radical excisional biopsy saves the patient from amputation. When incisional biopsy is used instead of excisional biopsy the definite surgery has to be made much wider and will often be mutilating. A case of chondrosarcoma illustrates the advantage and the disadvantage of this principle as well as an unusual reconstruction.

In orthopaedic surgical oncology the biopsy is very important. It is principally incisional or excisional. The excisional biopsy can be local, wide or local radical (Simon and Enneking, 1976). In highly malignant sarcomas even the wide excision is insufficient for a radical removal. However, many of the malignant soft tissue sarcomas in the extremities can be radically removed without amputation by a local radical excision, that is loge extirpation or muscular compartmental extirpation. The tumour is removed including one plane of uninvolved tissue in all directions, involved muscles are extirpated in their full length. An astonishingly large mass of muscles can be removed without important loss of function. Many soft tissue tumours in the extremities are removed with local radical excision without a diagnosis proven by open biopsy and histology. A prior incision biopsy seeds tumour cells in the wound cavity and the hematoma can spread far and make a later radical local excision impossible. With this policy some benign tumours are extirpated with unnecessary extensive operations but with minor invalidity. In return many extremities can be saved from amputation.

Radical excisional biopsy without a proven diagnosis, which thus is the rule in soft tissue tumours, often is unacceptable in bone tumours for two reasons:

1. In highly malignant tumours even wide local resection is of doubtful radicality.
2. The reconstruction after resection may be very difficult and leave the patient with considerable invalidity, which is unacceptable if the tumour turns out to be benign.

Highly malignant bone sarcomas often have to be treated by amputation and in such cases a diagnostic open biopsy is necessary to prove the diagnosis irrespective of if it is made in one stage with frozen sections or in two stages (Larsson et al., 1978).

In some situations in special locals, a curative excisional biopsy is possible also in bone tumours. This paper reports such a case and illustrates at the same time the advantage and the disadvantage.

Case Report

A 36-year-old merchant man had observed slight pain and discomfort from his left ankle during 4 months when he saw a doctor the first time. The ankle was at X-ray considered normal. Another four months later the patient was examined by an
orthopaedic surgeon and a new X-ray now showed an osteolytic process of the distal fibula (Fig. 1) which according to the radiologist could be a giant cell tumour. Angiography showed a moderately vascular tumour possibly less vascular than giant cell tumours (Laurin, 1979).

A fine needle aspiration biopsy with cytodiagnosis (Åkerman et al., 1977) was interpreted as a benign tumour, possibly a chondromyxoid fibroma. Total body scintigraphy with technetium-99 m diphosphonate showed a very high activity of the left distal fibula (Fig. 2) but also unexpectedly in the left clavicle. A radiographic examination including tomography disclosed a