

Gastric carcinoma metastasis to a knee with a newly inserted prosthesis

A case report

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About 3 months after arthroplasty of the knee, the 75-year-old patient returned with severe pain and swelling in the knee. A metastasis from an asymptomatic poorly differentiated mucinous adenocarcinoma of the stomach was found.

An otherwise essentially healthy 75-year-old man with severe arthrosis of both knees had undergone insertion of a right-sided knee prosthesis previously. Eighteen months later, a Freeman-Samuelsson prosthesis (Freeman et al. 1985) was implanted in the left knee. The patient had no subjective gastrointestinal symptoms. After the second operation, meteorism occurred, and consultation with a general surgeon did not lead to any explanation. The patient gradually improved and was discharged 3 weeks after the arthroplasty with good mobility of the knee.

Two months later, the patient returned and stated that the left knee had gradually become better until a week previously, when movement provoked severe pain. There was pronounced swelling in the anterior region of the knee. Bleeding was suspected, but no blood was aspirated. The patient underwent exploratory arthrotomy the following day. The prosthesis was firmly in position, but in the distal part of the quadriceps muscle and in the suprapatellar recess, there was a fist-sized, firm tumor considered to represent scar tissue. A resected portion was sent for histopathologic examination. The preliminary diagnosis was a poorly differentiated mucinous adenocarcinoma, but some form of synovial sarcoma was also considered (Figure 1). This led to further investigations, including gastroscopy, at which biopsy specimens were taken, and one of these showed a poorly differentiated adenocarcinoma (Figure 2). No distant metastases apart from the spread to the knee with the newly inserted prosthesis were found, and whole-body scintigraphy was normal. At laparotomy, an inoperable carcinoma of the stomach was

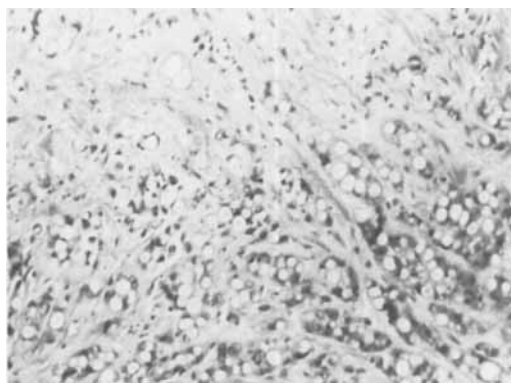


Figure 1. Tissue from the operation area in the left knee, showing partly dense and partly loose, somewhat edematous, richly vascular connective tissue. In the denser connective tissue, infiltrating groups of cells are seen with large, dark polymorphous nuclei and swollen, light cytoplasm forcing the nuclei into eccentric positions. Van Gieson's stain, $\times 100$.

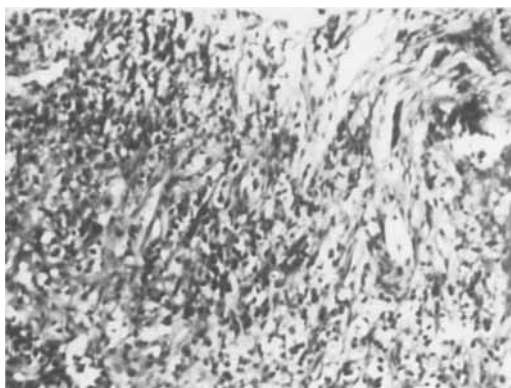


Figure 2. Biopsy specimen taken from the pyloric region at gastroscopy. This specimen shows gastric mucosa with ulceration and growth of poorly differentiated adenocarcinoma, which also displays cells of so-called signet ring type in certain areas. Van Gieson's stain, $\times 100$.

found, with overgrowth around the vena cava and local spread to lymph nodes. The patient died 2 months later of his carcinoma. An autopsy was not performed.

Discussion

This patient had an asymptomatic gastric carcinoma. In connection with the knee arthroplasty, malignant cells circulating in the blood may have entered the damaged tissue in the operation area and found a suitable seeding ground there (Murthy et al. 1989).

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References

- Freeman M A, Samuelson K M, Bertin K C. Freeman Samuelson total arthroplasty of the knee. Clin Orthop 1985; 192: 46-58.
- Murthy S M, Goldschmidt R A, Rao L N, Ammirati M, Buchmann T, Scanlon E F. The influence of surgical trauma on experimental metastasis. Cancer 1989; 64(10): 2035-44.