A case of a squamous-cell carcinoma of the cervix with metastases to the patella is of sufficient rarity to warrant reporting.

N. V., a white woman, aged thirty-six, was first seen at the Cincinnati General Hospital on Jan. 10, 1936, complaining of vaginal bleeding which had begun the preceding month.

History: No family history of cancer was obtained. The patient's general health had always been fair and except for the usual childhood diseases her history was essentially negative. She had been operated on at another hospital in 1932, at which time a bilateral salpingectomy, appendectomy, cervical repair, and perineorrhaphy were done.

The menarche had taken place at fifteen years, and periods had occurred every twenty-four days, of three to seven days' duration. There was no history of dysmenorrhea, menorrhagia, or metrorrhagia. The patient was married, and had had six children, all living, the oldest fourteen years of age, the youngest five years. There had been no miscarriages.

There was no complaint of hematuria, polyuria, or nocturia. Occasional attacks of frequency had occurred for several years, which were said to last for several weeks, disappearing spontaneously.

The Kahn test was negative on two occasions.

Physical Examination: The patient was thin and rather poorly nourished in appearance, anemic looking, and apparently in some pain. There was no undue dyspnea. The examination was essentially negative except for the pelvic findings.

The glands of Bartholin and Skene were negative. Just inside the vagina, extending in an anterior direction, was an overgrowth of tissue to the left. The cervix was almost entirely destroyed by cancer. Considerable bleeding was present. The uterus was small and, while it was in anterior position, was firmly fixed.

Rectal examination showed no extension of the growth. There was good sphincter control.

Diagnosis: A diagnosis of far advanced squamous-cell carcinoma with vaginal extension was made and was confirmed by the microscopic findings on biopsy.

Course: The patient was admitted to the wards and was given palliative irradiation for the control of hemorrhage, receiving a total of 2000 r units (measured in air) in ten treatments from Feb. 3 to Feb. 14, 1936. The factors were: 200 kvp.; filter 2 mm. copper and 1 mm. aluminum; distance 50 cm.; 15 ma.; time period 16½ minutes per treatment; field 15 X 15 cm. The anterior and posterior regions were treated alternately. The patient was then sent home with instructions to appear in the Tumor Clinic for follow-up. In February 1936 she was readmitted for a period of six days because of vaginal bleeding so severe as to require packing for a time. Seen again in April 1936, she complained for the first time of pain in the lower back, radiating down the right thigh to the knee. This persisted. On May 7 no bleeding was present on examination, and the patient reported that there had been no bloody discharge for two months. Only one finger could now be admitted to the vagina. By June 2 the pelvis was completely filled and obstructive bowel symptoms appeared. The pain in the knee and thigh continued, and the patient was again sent to the hospital, where she grew steadily worse. Roentgenograms of the spine, pelvis, and knee, July 2, 1936, showed some mottling of the greater trochanter of the right femur, while the
Fig. 1. Roentgenogram of Knee, Showing Involvement of Patella and Adjacent Bones

Fig. 2. Section of Patella, Showing Malignant Invasion. × 200
right knee showed a destructive lesion involving the patella, the condyles of the lower femur, and the upper third of the tibia and fibula (Fig. 1). A roentgenogram of the skull showed no evidence of malignancy, nor did films of the chest taken July 30, 1936. The patient died in August 1936.

**Autopsy:** Autopsy findings were as follows. The kidneys were small and symmetrical and weighed together 280 grams. Their capsules stripped with ease, revealing smooth, glistening parenchyma. The cortex was well demarcated and in the usual proportion. The peri-pelvic fat was not increased. The vascular walls were not thickened. The pelvis, ureters, and urethra revealed nothing abnormal. On opening the urinary bladder, the lining mucosa was seen to be congested and piled up into numerous polypoid projections, which were hard and firm over the area covering the vesico-vaginal septum. The vesico-vaginal wall was much thickened and indurated. Sections showed the tissues to be replaced by hard, firm, whitish-pink, foreign tissue which appeared to have infiltrated from a mass occupying the cervical and vaginal wall.

The ovaries and oviducts and the fundus and body of the uterus presented nothing remarkable. The normal anatomical markings of the cervix and vagina were distorted by an indurated, somewhat fungating mass. The vagina had lost all its normal characteristics, and was transformed into a rigid tube. The cervical os was not visible but was masked by the sloughing, eroded, purplish-red tumor. Sections revealed induration and infiltration through the cervix and vagina, into the surrounding tissue, of a pale, homogeneous, whitish mass of tissue, the only congested portion of which was the mucosa lining the vagina. This infiltrating process extended into the rectovaginal wall but did involve the rectal mucosa. The regional lymph nodes, the inguinal nodes, the peri-iliac and peri-aortic nodes were enlarged, hardened, and almost completely replaced by similar foreign tissue.

The right knee joint was superficially somewhat swollen and the patella elevated. By means of a lateral incision the patella was removed and sections showed pale, whitish, somewhat caseous neoplastic growth replacing the usual spongy red bone marrow.

Microscopic sections of the cancellated bone showed areas of destructive infiltration and replacement of marrow structure by masses of atypical epithelial cells (Fig. 2). The cells were arranged in sheets without evidence of organization. The microscopic diagnosis of these sections was carcinoma, probably epidermoid, metastatic in bone.

**Anatomical Diagnosis:** Far advanced carcinoma of the cervix; infiltration of carcinoma into rectovaginal and vesicovaginal walls; metastatic carcinoma of lungs, regional lymph nodes, peri-iliac and peri-aortic nodes; metastatic carcinoma of the right patella; visceral evidence of anemia; lobular pneumonia; bronchitis; chronic splenitis; early fatty infiltration of the liver.

**Summary**

A squamous-cell carcinoma of the cervix with patellar metastases is reported. The patellar involvement was proved by x-ray and microscopic sections.

1 Autopsy done by Dr. Kawasaki.