Goldzieher (1) in his monograph on the suprarenal stated that only six cases of hemangioma of that organ had been reported in the literature up to 1929. These hemangiomata resemble the analogous tumors seen in the liver and are usually found in the cortex. The size varies and all the regressive changes may be present: hemorrhage, necrosis, and calcification. A case report by Müller-Stüler (2) in 1933 described a bilateral adrenal tumor in an aged woman which microscopically presented the typical picture of dilated blood vessels. Tavernari (3) subsequently reported a tumor of the right suprarenal gland in a woman which also showed the histologic picture of a benign hemangioma.

In 1934 Menon and Annamalai (4) recorded the only example of hemangioblastoma of the adrenal gland. This tumor was found at autopsy in the right adrenal of an adult male who died from amebic dysentery. Microscopically it was hemangioma with small, thin-walled blood spaces and primitive endothelial cells. The tumor cells were fusiform, thin, with long nuclei, and resembled those lining venous spaces. In the solid areas the cells were oval and plump with dark-staining nuclei. In some places the cytoplasm was vacuolated.

**Case Report**

A white female, twenty-one years of age, was admitted to the Wyckoff Heights Hospital, on Oct. 27, 1937, with the general complaints of weakness and nervousness. For three months prior to admission she had suffered from abdominal cramps and diarrhea. Associated with the cramps she had frequently had involuntary bowel movements, the stool containing blood and mucus. The past medical history was without significance. General physical examination was negative. The heart, lungs, and abdomen disclosed no clinical abnormalities. The temperature was 100.6, pulse 120, and respirations 25. The blood count showed hemoglobin 85 per cent, red cells 4,700,000, and white cells 31,000 (polymorphonuclear leukocytes 89 per cent and lymphocytes 11 per cent). The admission diagnosis was mucous colitis with neurasthenia.

Because of the patient's general condition proctoscopy and examination following a barium enema were not done. The stools disclosed no ova or parasites; many red and white cells were present. The temperature ranged from 100 to 101.6, the pulse between 90 and 130, respirations between 20 and 25. The patient grew progressively worse and died on the eighth day after admission.

At autopsy the lungs showed no abnormalities. The pericardial sac contained about 5 c.c. of clear fluid. The musculature of the heart was brown in color and firm; the valves were competent. The esophagus was normal. No thymus gland was present.

The abdominal cavity contained no free fluid. Examination of the gastro-intestinal tract showed no evidence of gastric ulceration or new growth. Occasional small white nodules were present in the rugae of the small intestine, irregularly placed along its course. The entire mucosa of the colon was involved in an extensive polypoid thickening beginning at the cecum and extending to and including the rectum. The sigmoid and rectum con-
tained long pedunculated tumors which were grey and pink in color. There was some old blood in the lumen of the colon and an occasional free piece of tumor tissue. The mesentery of the small intestine contained a small amount of fat, but no enlarged nodes. The liver weighed 1600 gm. and the capsule was smooth and glistening. Section of the organ disclosed extensive fatty changes, but no evidence of metastasis or fibrosis. The gall-bladder was thin-walled and free from the surrounding structures. The pancreas weighed 30 gm., was pinkish yellow in color, and showed the usual lobular markings. The spleen weighed 150 gm. The capsule was slate-blue in color, and wrinkled; the parenchyma pink, soft, and pultaceous. The left adrenal gland was normal in gross appearance, weighing 5 gm. The right adrenal was completely replaced by a large encapsulated tumor 8 cm. in diameter, section of which disclosed a central cystic portion filled with a gelatinous yellow fluid. The outer portion of the mass was made up of a firm, pinkish yellow tissue in which an occasional small hemorrhagic area could be seen. No normal adrenal tissue was evident on gross examination. The kidneys had a combined weight of 300 gm. and appeared normal on section. The upper pole of the right kidney was flattened from the pressure of the tumor. The capsules stripped with ease. The ureters and bladder were normal. The uterus, tubes, and ovaries were small and disclosed no gross abnormal changes.

![Image](image_url)

**Fig. 1. Hemangioblastoma of Adrenal Gland**

On microscopic examination the colon showed a marked overgrowth and polypoid arrangement of the mucosa. Some of the cells with basal nuclei were actively secreting mucus. Alveoli were lined by a single or double layer of compressed epithelial cells which were elongated and of a high columnar type. These cells presented a cigarette-like appearance and their nuclei were elongated and hyperchromatic. There was some round-cell infiltration in the stroma around these glands, but no epithelial invasion of the submucosa or muscularis.

The right adrenal gland showed a disorderly overgrowth of cells polygonal in shape and containing large irregular hyperchromatic nuclei. Occasional mitotic figures were seen. The cells appeared to line small vascular channels (Fig. 1). In the larger vessels, which were filled with blood, these cells were flattened and resembled more closely the normal endothelium. Some of the vessels had become unusually distended with blood and resembled hemangiomata seen in the liver. Other portions of the adrenal gland showed extensive hemorrhage and necrosis of the tissue. There were some areas in the more solid portions of the tumor in which the cells were elongated and spindle-shaped and more closely packed. Staining of the tissue with Sudan 3 revealed no fat in the cytoplasm of these cells. The silver stain, with the Foot technic, disclosed a fine reticulum-like structure which outlined
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the walls of the capillaries and ran through the cytoplasm of the cells. The entire tumor appeared to be well encapsulated by dense connective tissue. At one point in this capsule a small area of cortical tissue showing the zona glomerulosa and zona fasciculata was present.

The left adrenal, pancreas, heart, aorta and lungs were microscopically normal. In the liver cloudy swelling and fatty degeneration were present. The uterus and ovaries were normal. The kidneys showed some cloudy swelling.

Diagnosis: Multiple polyposis of colon with carcinoma. Hemangioblastoma of right adrenal.

Comment

This case is interesting from three points of view. Malignancy in young people is always noteworthy because of the widely accepted idea that cancer is a disease of old age. Another feature of interest is the association of two distinct and independent neoplasms. Finally, this is the second case of hemangioblastoma of the suprarenal recorded in the literature.

It is interesting to note the coincidence of intestinal disease in the two cases, amebic dysentery in the one described by Menon and Annamalai (4) and polyposis with carcinoma in the present case. In each instance the right suprarenal gland was involved.

References