Prostatic tissue in a benign cystic teratoma of the ovary. Report of two cases.

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Prostatic tissue in ovarian cystic teratoma is a rare finding and only a few cases have been published in the literature [1–5]. We report two additional cases of benign cystic teratoma of ovary with areas of benign prostatic tissue. Pathogenetic aspects of this unusual differentiation are discussed.

Case Descriptions

Case 1. A 46-year-old nulliparous woman presented with lower abdominal pain and a palpable mass in the area of the left ovary. A left salpingo-oophorectomy was performed. The specimen submitted was a cystic ovarian mass measuring 6x5x3 cm and containing yellow sebaceous material, hair and solid nodules attached to its wall. The fallopian tube was unremarkable.

Case 2. A 51-year-old woman (gravida 3, para 2) presented with a right ovarian mass. A right salpingo-oophorectomy yielded a cystic ovarian mass, 7x5x3 cm, that contained gritty yellow-white content mixed with hair. The wall of the cyst was focally thickened.

Microscopic examination of both cysts revealed a mature cystic teratoma. The tumor was composed of different mature tissue elements such as skin, neural tissue and respiratory epithelium. In both cases well-defined nodules of benign prostatic tissue were found in the wall [Figure].

The prostatic nodules consisted of acini and ducts lined by columnar epithelium and surrounded by basal cells in a fibromuscular stroma. In case 2, mucinous glands resembling Cowper’s glands were noted. Foci of transitional epithelium and basal cell hyperplasia were seen in both cases.

Immunohistochemical staining for prostate-specific antigen and prostate-specific alkaline phosphotase was strongly positive in prostatic epithelium in both cases. High molecular weight cytokeratin (34βE12) highlighted the basal cells.

Comment

Only eight cases of prostatic tissue in benign cystic teratoma of the ovary have been reported [1–5]. Ovarian teratomas arise from a single ovarian germ cell via parthenogenesis following the first meiotic division [1,2]. The individual cells of these tumors have a 46XX karyotype. The lack of the Y chromosome is presumed to exclude the development of male genital structures in ovarian teratomas [2]. Several explanations for this mysterious phenomenon were presented in the literature. The finding of the prostatic tissue in close relation to urothelium in other reported cases [1–5], including our two patients, reinforces the suggestion that the prostatic tissue in ovarian teratomas derives from embryonic remnants of the endodermal buds of the urogenital sinus [4,5]. The presence of prostatic tissue in a 46XX tumor may be related to induction of endodermal cells by locally produced androgen [1,2]. Luteinized cells found adjacent to the teratoma in one reported case [2] were proposed as a source of androgen. In our patients there were no clinical signs of virilization and no luteinized cells were found.

The possibility that the prostate-forming genetic material from the paternal chromosomes may have failed to be inactivated during partheno-
genesis was also raised as an explanation for the presence of male tissue in ovarian teratoma [4]. The uniform staining for prostate-specific antigen and prostate-specific alkaline phosphatase confirms prostatic origin as opposed to the female para-urethral Skene’s glands [1]. Careful sampling and examination of ovarian cystic teratoma may likely reveal that such a mysterious finding – prostatic tissue – is not so rare.

References

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My kids never had the advantage I had: I was born poor
Kirk Douglas, American film actor (1916– )

Capsule

New arenavirus blamed for recent deaths in California

Last week, the California Department of Health Services announced that a recently discovered virus carried by wood rats and pack rats killed a 14-year-old girl in April. Moreover, the department says, there’s strong evidence that the virus has caused at least two other deaths within the last 14 months.

The agent, called the Whitewater Arroyo virus, which belongs to the Arena family, probably infects humans when they inhale aerosolized rat urine. Hantaviruses, another family of rare viruses carried by rodents, infect people by a similar route. Although the evidence is not airtight yet, researchers say two of the three patients’ symptoms – high fever, internal bleeding and liver problems – suggest that the new disease is indeed a hemorrhagic fever. If the Whitewater Arroyo virus is the culprit, that would be true to form: The virus is an arenavirus, a family that includes Lassa as well as several South American viruses known to cause hemorrhagic fever.

So far, it has been found in rodents in six western states. It is not known how many people infected with the virus go on to develop disease. Even so, Glaser and others suspect that more people may have succumbed to the disease in recent years, which is why they plan to go back and look at blood and tissue samples from patients who died of unexplained illnesses that bear some hallmarks of hemorrhagic fever.

Some arenaviruses are treatable with a drug called ribavirin, raising hopes that future patients may be saved if the disease is diagnosed in time. In addition, other arenaviruses have been known to cause secondary infections when hospital workers come into contact with blood from infected patients, which can occur easily because they’re often bleeding extensively, says Robert Tesh, also of UTMB. Patients with hemorrhagic fever-like symptoms should probably be handled with extra care, says Tesh, who has studied South American arenaviruses such as Guanarito and Junin, which cause Venezuelan hemorrhagic fever and Argentine hemorrhagic fever; respectively.

North America had seemed blissfully free of dangerous arenaviruses until now. Although there are at least 14 arenaviruses known in South America, four of them deadly, the only previously discovered North American member of the family – the Tamiami virus, found in cotton rats in South Florida in 1970 – does not seem to make anyone sick. But in 1996, Fulhorst, then at the Centers for Disease Control and Prevention in Atlanta, discovered the Whitewater Arroyo virus, named after the site in New Mexico where it was first found in several rat species of the genus Neotoma. Over the past 3 years, Fulhorst, working with rodent-control officials in several states, discovered the virus in western Oklahoma, Colorado, Utah, Texas, and California.

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