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Carcinoma of the Fallopian Tube

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Seven cases of primary carcinoma of the fallopian tube have been reviewed and compared with cases previously reported in the literature. Sterility was present in 51% of patients. There was a variety of symptoms, but the most frequent was vaginal discharge, in 42% of patients. Two patients manifested urinary symptoms and one patient ascites. In six of our seven patients, an adnexal mass was present. Although clinical diagnosis will always be difficult one should be highly suspicious of this disease in patients between 40 and 60 years of age with these symptoms.

The least frequent, but not the least important, site of primary carcinoma in the female genital tract is carcinoma of the fallopian tube. In reviewing cases from the tumor registry of the Henry Ford Hospital from 1958 to 1968 we encountered seven such cases. The incidence of this carcinoma ranges between .16% and 1.6%¹ of all female genital carcinomas. After reviewing 3,878 primary malignant lesions of the female genital tract, Hu, Taymor and Hertig,² reported 12 cases of carcinoma of the fallopian tube, giving an average incidence of 0.31%.

The first case of this carcinoma was reported by Orthman in Germany in 1886. Since then, 470 cases were reported up to 1950,² and a total of 780 by 1965.³ Sedlis,⁴ in a review of 232 cases, reported the greatest incidence between the fifth and sixth decade of life, with 115 cases occurring during this stage of life. However, the illness has been reported in an 18-year-old⁵ as well as in patients over 60 years of age.^{6,8}

The distribution of the primary carcinoma between unilateral fallopian tubes has been reported as right tube 41.5%, left tube 41.5%, and bilaterally 17%.⁷ Some reports of bilaterality are as high as 26%.⁴ Primary carcinoma of the fallopian tube has been associated with sterility in 27% of patients, as reported by Hu, Taymor and Hertig,² in 50% reported by Sedlis⁴ and others.²³ Hanton⁵ reported the highest sterility incidence, 59%.

Approximately 20 individual cases have been reported in the literature associating tuberculosis and carcinoma simultaneously in the fallopian tube.^{7,9,10} None of these has been satisfactorily explained, and as Novak¹¹ pointed out, "Tubal tuberculosis may at times produce a highly adenomatous picture which can easily be mistaken for carcinoma." An association with salpingitis has been reported by Hanton et al in 50% of cases; but these authors suggested that the inflammatory changes were due to secondary tubal obstruction caused by the tumor. Tubal carcinoma has also been reported in association with uterine

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myoma in 40% of cases, as reported by Frankel,¹² but this association seems to be coincidental.

Symptomatology and Diagnosis

The preoperative diagnosis has been most difficult because of lack of characteristic history, symptoms and physical findings. However, Ruth and Batavia stated,¹³ "Early diagnosis and treatment are possible when both the patient and physician act in accordance with present concepts of preventive medicine and also by accepting that the true incidence of primary carcinoma of the fallopian tube is probably greater than appreciated." Occasionally symptoms have been similar to those of an ovarian cyst;¹⁴ sometimes it has been associated with urinary tract symptoms.^{13, 14} The more frequent symptoms, as reported by Sedlis⁴ in 28% of patients, have been irregular vaginal bleeding, menorrhagia, and post-menopausal bleeding. Vaginal discharge, a common symptom, has been reported in 61% of patients by Stern and Hardley.¹⁶ Abdominal pain has been present in 28% of patients and has been described as being located in the lower abdomen. The pain has been "colicky," with intermittent radiation to the lumbar area.⁷ The presence of adnexal mass during a pelvic examination has been noted in 85%.¹⁶ Mason¹⁷ has considered this a constant finding. "Hydrops tubae profluens"¹⁸ described as a "sudden discharge of yellow or serosanguinolent fluid followed by disappearance of the adnexal mass" can be seen in any condition with hydrosalpinx.¹⁹ Sedlis has noted this finding in 10 cases reported in the literature. Hanton reported such a condition present in only 11% of the cases.

As mentioned previously, diagnosis has been difficult, but in the presence of a suspicious or positive "Pap" smear with no tumor in the endometrium or cervix, the diagnosis of carcinoma of the fallopian tube should be considered.²⁰ Tumor cells from the tubal mucosa may be transported through the tubal lumen by peristalsis or ciliary movement. These cells subsequently traverse the uterine cavity and appear in vaginal secretions. Hysterosalpingography as a means of diagnosis has been employed,²¹ but some have felt that this should be abandoned due to the potential danger of spreading the malignancy²² via peritoneal seeding. A positive cul-de-sac tap may indicate spread of the tumor beyond the tubal lumen.⁵ A diagnostic procedure such as laparoscopy, with direct visualization and biopsy capability, may prove to be helpful.

Microscopic Pathology

There have been different classifications in the literature; however, the classification suggested by Sunger and Barth has been most commonly accepted. The predominant cell type has been papillary with the alveolar pattern being a later stage of this type of growth. Hu, Taymor and Hertig² suggested the following classification:

Grade I (papillary) — Papillary growth confined to the lumen of the tube; the transition between normal and malignant cells is clearly seen.

Grade II (papillary-alveolar) — Beginning of glandular formation with invasion of the tubal wall.

Grade III (alveolar-medullary) — Loss of papillary projections and glandular arrangements and showing anaplasia.

TABLE I

Report of Seven Patients from the Henry Ford Hospital Tumor Registry

Age	Parity	Major Symptoms	Pelvic Exam	Lab Test & Pap Smear	Dx Prior to Surgery	Localization
42	1	Vaginal discharge	Right adnexal mass	Negative	Suspected	Right tube
58	0	Abdominal distention (ascites)	Left adnexae tender	Paracentesis positive for malignant cells	No	Left tube
60	0	Suprapubic pressure, urinary frequency	Right adnexal mass	Negative	No	Right tube
45	1	Lower abdominal pain, dyspareunia (16 yrs. ago had supracervical hysterectomy)	Bilateral adnexal pain	Negative	No	Left tube, right tube; salpingitis
55	0	Serosanguineous Vaginal discharge (BSO* prior to referral to HFH)	Mass in cul-de-sac	Negative	No	Bilateral
58	0	Vaginal discharge (RSO* prior to referral to HFH)	Right adnexal mass	Negative	No	Right tube
57	1	Abdominal pain in LLQ, urinary frequency, dysuria	Left adnexal mass	IVP; mass left side	No	Left tube

*Bilateral salpingo-oophorectomy

**Right salpingo-oophorectomy

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Results

In our review all seven patients with primary carcinoma of the fallopian tube have been between 40 and 60 years of age. Sterility was found in four patients, 57%. In the remaining three cases, each patient had been pregnant only once. An adnexal mass was found in six of seven patients, an incidence of 85%. Vaginal discharge was present in 42%, or three patients; urinary symptoms in 28%, or two patients; abdominal pain in 28%, or two patients; ascites in 14%, or one patient. Localization of the lesion was equal in the right and left tubes, and in only one patient was it found bilaterally.

Treatment

Treatment of these seven patients is described in Table II.

Summary

Although clinical diagnosis will always be difficult, one should be highly suspicious of this disease in patients between 40 and 60 years of age in whom a pelvic examination reveals an adnexal mass in association with vaginal discharge, bleeding or urinary symptoms. Early diagnosis can be enhanced when a physician with a high degree of suspicion incorporates laparoscopy as a means of diagnosis in patients with pelvic mass and obscure clinical findings.

To facilitate treatment, a standard clinical classification of carcinoma of the fallopian tube should be established and utilized at the time of diagnosis. The following outline should be considered for clinical staging similar to the FIGO classification for ovarian carcinoma.

TABLE II

<u>Treatment</u>	<u>Patients</u>	<u>Survival</u>
TAH, *BSO, ** and radiotherapy	2	1) Asymptomatic 89 months 2) Asymptomatic 19 months
TAH and BSO	1	Asymptomatic 5 years, then recurrence
TAH, BSO, 5-Fluorouracil and radioactive gold AUI98	1	Expired after 9 months
BSO, radium insertion, TAH and radiotherapy	1	Expired after 12 months
BSO and trachelectomy	1	Expired after 24 months
RSO*** and radiotherapy	1	Expired after 24 months

- * Total abdominal hysterectomy
** Bilateral salpingo-oophorectomy
*** Right salpingo-oophorectomy

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Stage I: Growth limited to the tube.

Ia: Growth confined to tubal lumen.

Ib: Growth invades tubal wall but no evidence of metastasis.

Stage II: Growth involves both tubes plus extension into adjacent pelvic structures.

Iia: Primary and secondary lesions totally surgically removable.

Iib: Primary and secondary lesions not totally surgically removable.

Stage III: Growth involves one or both tubes plus widespread metastasis, but growth is partially removable.

IIia: With abdominal extension to not removable metastasis. *IIib:* With distant metastasis (outside peritoneal cavity).

Stage IV: Growths involving one or both tubes and entirely inoperable.

IVa: Cases in which laparotomy is

performed and diagnosis verified.

This classification by stages would permit a standard approach in the management of carcinoma of the fallopian tube. In accordance with this, total abdominal hysterectomy and bilateral salpingo-oophorectomy should be done in Stages Ia, Ib, and Iia. This should also be utilized in Stages Iib and IIia, if technically possible. If not feasible in Stages IIia and IIib, meticulous care should be taken to remove as much tumor as possible. Radiation therapy should follow surgery in all Stage I, II, and III lesions. Radiation therapy should be the prime mode of adjunctive therapy in Stage IIia. To date chemotherapy has produced only minimal long-term palliative results.

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