

ENDOMETRIAL CARCINOMA WITH EXTENSIVE CALCIFICATION (PSAMMOMA BODY) IN THE MYOMETRIUM

Report of A Case

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A 55 years old housewife, Gravida 1 Para 1, had undergone radical surgery for uterine malignancy. Pathological examination of operative specimens disclosed endometrial carcinoma with extensive calcification (psammoma body) in the myometrium. The psammoma body is rarely associated with endometrial carcinoma. The present case is presented in view of its extreme rarity in Taiwan. A brief review of psammoma body as related to the histologic type of cancer and its pathogenesis is included.

Occurrence of calcification is very rarely observed in endometrial carcinoma as compared with that in adenocarcinoma in other organs. In particular, it must be extremely rare in view of the rarity of endometrial cancer in Taiwan as compared with European and American countries.^(5,8) The present case is presented with a brief review of pathogenesis of calcification (psammoma body) because it is probably first observed on the island.

CASE REPORT

A housewife, aged 55, native of Taiwan, Gravida 1, Para 1, had had vaginal spotting and profuse leukorrhea for one year. Since the first part of January 1972, she consulted some gynecologist who had treated her under the diagnosis of pelvic inflammation but no improvement resulted. Meanwhile, cer-

vical biopsy was taken but only cervical erosion was reported. On November 24 1973, she visited the Department of Obstetrics and Gynecology of the Taipei Municipal Chunghsing Hospital for lower abdominal pain in addition to the complaints above mentioned. Cervical biopsy was repeated. Pathological report was adenocarcinoma of the endocervix and cervical erosion of the exocervix. She was, therefore, admitted for surgery.

The past history and family history were non-contributory. Menarche started at the age of 18, and menstruation had been regular with 30 days intervals, 3 days duration and moderate flow. Her only and last delivery was at her age of 36, and menopause started at 53. On admission, Physical examination revealed a moderately nourished woman, with slight anemia and furred tongue.

Chest was negative, and Virchow's nodes were negative. Abdomen was flat and essentially negative. Pelvic examination revealed retroverted enlarged uterus, negative adnexae and eroded cervix. No parametrial infiltration was palpable, but only left parametrium showed slight induration.

Laboratory findings:

1. KUB, IVP and Chest X-ray revealed negative findings.
2. Cystoscopy revealed only chronic inflammation.
3. BMR = +29%
4. Urine routine: PH 6.0, Protein (+) Sugar (-), otherwise negative.
5. Blood routine: RBC 341 million, Wbc 7,450, Hb 10.6 gm/bl.
6. Vaginal cytologic smear test revealed weakly suspicious cells, Class III-a.
7. ECG: non-specific ST-T change (minor). Bickenbach test: normal.
8. Kidney function: both dilution and condensation test showed normal function.
9. Electrolytes: glucose 95 mg/dl, NPN 29 mg/dl, Urea N 12 mg/dl, Uric acid 4.2 m/dl, Creatine 1.2 mg/dl, Cholesterol total 150 mg/dl, Protein total 6.0 g/dl, Albumin 2.6 g/dl, Globulin 3.4 g/dl, A/G 0.76. Calcium 5.0 M.E/l.
10. Liver function tests: bilirubin total 0.2 mg/dl, direct 0.1 mg/dl, thymol turbidity test 1.5 μ , zinc turbidity 11, CCF++/24 hrs., Takata reaction 0. Alka-

line phosphatase 1.1, GOT 27, GPT 22.

Treatment and postoperative course: The patient underwent radical hysterectomy and bilateral pelvic lymphadenectomy under general anesthesia. During the operation she received 1,500 cc of blood transfusion. The post-operative course was uneventful.

Pathological reports: The uterus measured 9.5×7.5×4.5 cm, being larger than normal. The serosal surface was covered by thick fibroadipose tissue, especially marked on the fundus and on the adnexal region. (Fig. 1) A tumorous nodule about 1.5 cm in diameter was bulging from the lower anterior surface. On cutting, (Fig. 2) the endometrial cavity measured 5.5×4.5×0.3 cm, and was filled up with grayisny necrotic tumor tissue; the whole endometrium was replaced by the tumor tissues measuring about 5.5×5×3.5 cm. The myometrium measured 1.5 cm in thickness. The superficial layer of the myometrium was also involved by the tumor and the nodule bulging out from the lower anterior wall was made up of whitish cancerous tissue. The left cornual region revealed adenomyomatous lesion. The endocervical canal measured 3 cm in length. The proximal canal measured 3 cm in length. The proximal part of the endocervical canal was also invaded by the cancer. The cervix was normal in size. The portio vaginalis measured 2.8×2.5 cm in the largest dimension and was covered by hemorrhagic substance. The vaginal cuff removed measured up to 3 cm in length. The vaginal cuff and vaginal

fornix were grossly not remarkable. The right and left parametriae measured $4 \times 2 \times 2$ cm and $5 \times 3 \times 1$ cm respectively. They were grossly not remarkable. The right fallopian tube measured 6.5 cm in length and up to 0.5 cm in diameter. It was not remarkable except for fibrous adhesion mentioned above. The right ovary measured $2.7 \times 1.8 \times 0.7$ cm and was not remarkable. The left fallopian tube measured 7.5 cm in length and 0.6 cm in diameter. It was kinking and showed adhesion of marked fibroadipose tissue. The left ovary measured $2 \times 1.2 \times 0.6$ cm and it adhered to the left fallopian tube but no cancerous lesion was found. Forty-five regional lymph nodes were removed. Microscopically, the tumor in the endometrial cavity showed a picture of adenocarcinoma. (Fig. 3) It invaded the whole endometrium and as the superficial layer of the myometrium. The mucosal surface of the endocervix was also invaded by the adenocarcinoma but the portio vaginalis and vaginal cuff were free from invasion. The nodule bulging out from the anterior wall of the uterine body was found to be a metastatic adenocarcinoma. The left cornual region disclosed adenomyosis and the myometrium showed diffuse calcification. The calcification often formed groups of psammoma bodies which were deposited in the interstitial part of the myometrium. (Fig. 4, 5, 6) Both parametriae and both adnexae were free from carcinomatous invasion but the right fallopian tube showed a picture of chronic salpingitis. Marked acute and chronic inflammatory cell

infiltration was noted in the left tube and the superficial portion of the left ovary. Six out of 45 regional lymph nodes (3 in the right hypogastric and lumbal nodes group, 2 in the left hypogastric nodes group and one in the left profound iliac nodes group) showed metastatic adenocarcinoma.

COMMENT

Although endometrial biopsy was not performed at OPD and before operation due to refusal of the patient, the possibility of endometrial carcinoma was anticipated. Therefore extensive radical operation with pelvic lymphadenectomy was performed because it was the senior author's (C. T. H.) principle that endometrial cancer with cervical extension (Stage II) should be operated as cervical cancer.^{5,8)} (and Symposium at the 20th Annual Clinical Meeting of ACOG at New York 1970) Based on the pathological finding, beyond doubt as endometrial cancer, Stage 2, according to the Internal Classification set up by FIGO cancer Committee. The extensive radical operation for this case was definitely justified by the extensive lymph-nodes involvement.

Psammoma body manifests, and is characterized by, multiple fine areas of calcification frequently within the tumor of serous cystadenoma and cystadenocarcinoma of the ovary.⁽¹³⁾ Uterine leiomyoma, papillary adenocarcinoma of thyroid, meningioma and gastric cancer. As in benign tumor, the calcification may follow hemorrhage, degeneration and cystic formation in cancerous tissue.^(1-4,7,9-17)

Review of the literature indicates that psammoma body was also found in papillary adenocarcinoma or mucinous adenocarcinoma.⁽¹⁷⁾ The pathogenesis of calcification in human tissue was described by Batlan⁽⁴⁾ (1954) who proposed theory, that mucin being a glycoprotein has a great propensity to calcification; it was also supported by Matthews *et al.*⁽¹²⁾ (1958), Khilnani⁽¹⁰⁾ (1960), and Jaedke *et al.*⁽⁹⁾ (1963). In this case calcium deposits were seen in the areas of mucoid degeneration of adenocarcinoma tissue and lymphatic vessels in myometrium, which may support this theory. Serum calcium and phosphate levels were described in the cases with calcification by Butle,⁽¹³⁾ but the values were within normal range in the present case. On the other hand, Robertson *et al.*⁽¹⁴⁾ (1952) described that pathological calcification in human tissues was usually seen as a result of one of the two following mechanisms: 1) abnormally high concentration of calcium or phosphate in the blood may bring about precipitation of calcium phosphate even in healthy tissue, or 2) local tissue damage can be accompanied by precipitation of calcium phosphate even with normal blood levels. Local tissue damages responsible for calcification are those neoplastic growth showing necrosis, fibrosis, or hyaline changes, Gemell⁽⁶⁾ (1964) and Verstreath *et al.*⁽¹⁵⁾ (1964) emphasized the important role of alkalinity in the pathogenesis of calcification; decreased metabolism of cells in ischemic and necrotic areas increases the relative alkalinity of the circulating fluid which causes calcifica-

tion. Hino *et al.* (1967) and Yamagia (1969) supported this theory.^(7,16)

There has been no report in the literature regarding the relation between the presence of psammoma body and prognosis of the diseases. Since the present case is endometrial cancer with extensive lymph nodes involvement, the possibility of cure should be minimum. However, if calcification should be the result of degeneration, necrosis, or fibrosis of normal or cancer tissue, such changes might be related to prognosis; therefore it would be very interesting to follow up the outcome of the present Case.

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子宮內膜癌合併嚴重性子宮肌層鈣化之病例報告

臺北醫學院婦產科

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陳 定 堯

子宮內膜癌合併有嚴重性鈣化之病例比較少見，通常 psammoma Body 的形成出現於 meningioma，甲狀腺的 papillary adenocarcinoma 及卵巢的 papillary serous cystoadenoma, pseudonecrotic adenocarcinoma，胃的惡性腫瘤，子宮肌瘤及一些壞死後的組織上，由文獻所記載 psammoma Body 都發生在腺瘤或有粘液分泌的腫瘤上，其發生真正的原因尚未明白，但有下列幾種可能：

① 粘液是一種 glycoprotein，比較容易引

起鈣化。

② 局部組織損傷，玻璃變性，纖維化，壞死及腫瘍引起鈣化。

③ 血中磷酸鈣正常，但因局部組織損傷引起鈣的沈澱。

④ 損傷部位的細胞代謝降低，使其碱性相對的增加，引起鈣的沈着。

本病例發生在子宮膜癌，文獻上非常稀罕，尤其在臺灣子宮內膜癌較少恐是在臺灣第一例所見故在此提出報告。



Fig. 1. Gross Specimen in fixed state. The uterus is slightly enlarged. the serosal surface is covered by thick fibroadipose tissue.

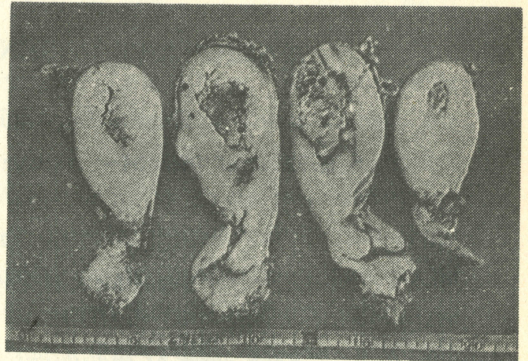


Fig. 2. Cut surface of uterus in fixed state. The endometrial cavity is filled up with grayish necrotic tumorous tissue and also invading the Superficial part of myometrium.

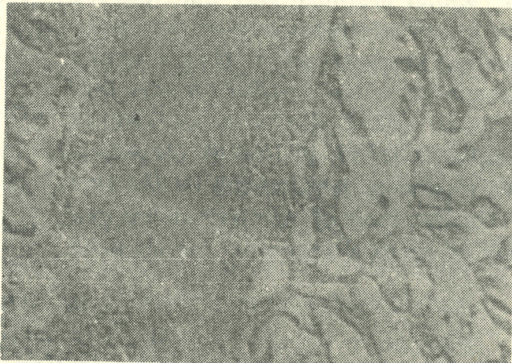


Fig. 3. Histological appearance of the endometrium adenocarcinoma.



Fig. 4. adenocarcinoma accompanied with marked Calcification (psammoma body) invading the Sinusoid in myometrium.

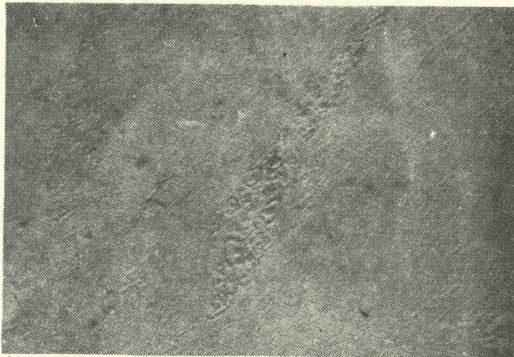


Fig. 5. High Power View of the Fig. 4.

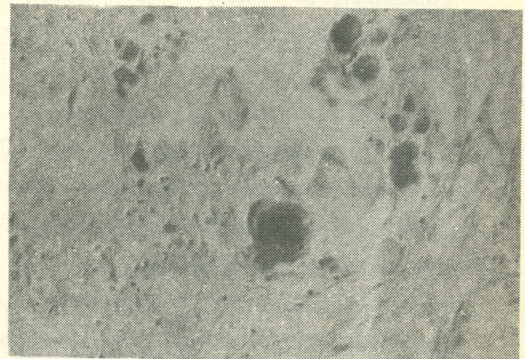


Fig. 6. Calcification (psammoma body) to be found in the adenocarcinoma which have involved into the myometrium.