

Is insulin-dependent diabetes and obesity a predisposition for endometrial and pancreatic carcinoma?

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Summary

Among 178 patients operated for endometrial carcinoma during a five-year period, 17 were re-operated at the Institute of Surgery (9.5%) because of pancreatic head carcinoma. The frequency of insulin-dependent diabetes was pointed out in patients – 28% of those who were first diagnosed with endometrial carcinoma. Moreover in the same group diagnosed with endometrial carcinoma, we found 17 to have pancreatic carcinoma, and among those there were 12 cases that had diabetes (70.58%).

Key words: Endometrial carcinoma; Pancreatic carcinoma; Diabetes; Obesity.

Introduction

Keeping in mind that diabetes and obesity are entities with a growing incidence today, it is necessary to consider this problem among the multiple fields of medicine. Diabetes can be correlated with a pathologically increased body mass index (BMI) [1]. A genetic predisposition for diabetes is well known and could be correlated to pathologically increased BMI, thus increased estrogen production [2, 3]. At the same time, the increased estrogen production may lead to a mutation in the endometrial cells and formation of carcinoma in these cells [4, 5]. A diagnosis of pancreatic carcinoma is easier with the appearance of new diagnostic procedures such as ultrasound (US), computed tomography (CT) scan and magnetic resonance imaging (MRI) imaging [6]. With advanced findings in the genetic changes in pancreatic carcinoma, future research could include the identification of those events in the early stages of the disease which could, together with advanced technology, lead to earlier detection of pancreatic cancer when curability can still be achieved [7].

Materials and Methods

During a five-year study, we retrospectively analyzed 178 patients with established endometrial carcinoma. In some of the cases the diagnosis was established after fractional curettage, and confirmed the diagnosis after surgery. In 80% of the cases, a common factor was increased BMI. Together with this risk factor, out of the 178 patients, 49 patients (28%) had insulin-dependent diabetes. In 17 cases (9.5%) pancreatic head carcinoma was also present. Out of all patients undergoing pancreatic head surgery, insulin-dependent diabetes was present in 12 cases of obese women. Some of the cases were observed first in

the surgical ward, while some patients were primarily admitted to the gynecology ward. The age of our patients ranged between 55 and 71 (mean age 55). The mean time of observation was 24 months (range: 2 to 111 months). All the patients had curative resection. The patients with different histological diagnoses (such as neuroendocinous tumors, mucous and serous cystic tumors, and adenocarcinoma), where duodenum pancreatectomy was performed, were not a part of this study.

Results and Discussion

We analyzed 178 patients with endometrial carcinoma. We carried out a five-year retrospective study. Summarizing the patient data from the surgery and gynecology department records, complete laboratory results, patient history and surgical and histopathological findings, we obtained interesting data. Out of the 178 women with carcinoma, 17 cases (9.5%) had pancreatic head surgery. It prompted us to search for a common factor in these cases. In 80% of the endometrial carcinoma cases, a common factor was increased BMI. Together with this risk factor, of the 178 patients, 49 patients (28%) had insulin-dependent diabetes and 17 patients (9.5%) had pancreatic head carcinoma. Out of all patients with pancreatic carcinoma, insulin-dependent diabetes was present in 12 cases (70.58%). Some of the cases were first observed in the surgical ward, while some patients were primarily admitted to the gynecology ward. The mean time of observation was 24 months and all the patients had curative resection.

In the group of patients who were subjected to surgery for ductal pancreatic adenocarcinoma, total five-year survival rate was 11%, while the literature data show a five-year survival range between 6.8% and 25% [6]. If patients had endometrial carcinoma together with ductal pancreatic adenocarcinoma, the survival rate was much

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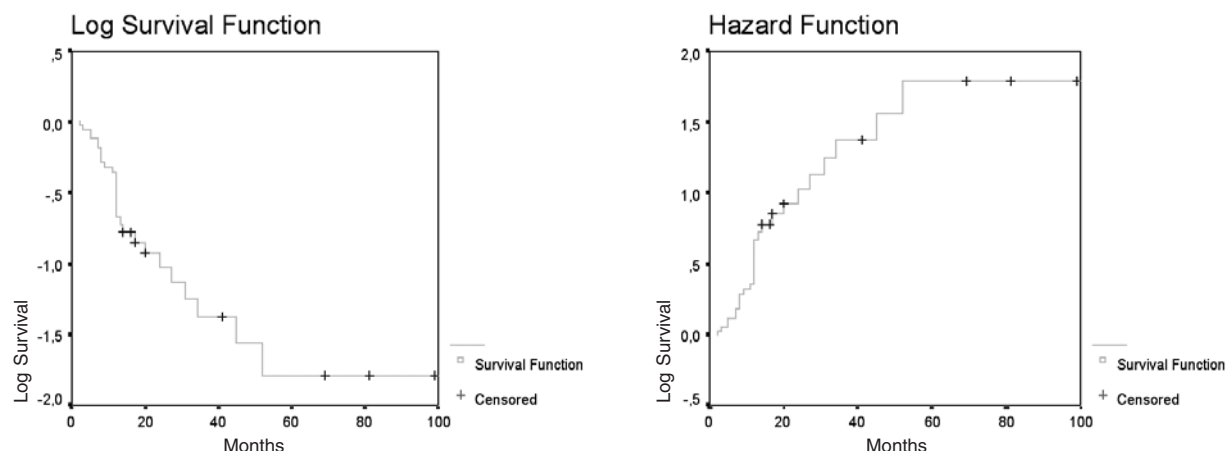


Figure 1. — Cumulative survival rate (Kaplan-Meier curve) after duodenal pancreatectomy in all 17 patients with pancreatic head carcinoma and endometrial cancer.

lower - less than 2.3%. We do not believe this was connected with endometrial carcinoma cases, as the highest stage of invasion was IC. Nonetheless, complete immunological collapse in chronic metabolic disturbances should be kept in mind.

The survival rate of endometrial carcinoma cases alone in our 5-year-analysis (without coexisting pancreatic cancer) was: Stage I more than 95%; Stage II 75-85%, Stage III less than 12%, and Stage IV less than 2% [2, 4]

In relation to their influence to survival rate, besides pancreatic carcinoma, several prognostic factors were analyzed. It was established that age and preoperative symptoms had no significant influence on survival in our study, or in papers published so far [5, 8].

Likewise, there has been no positive relation between the stage of endometrial carcinoma and the stage of pancreatic carcinoma reported [6].

In our group of patients that had both types of tumors together, the lowest survival rate was in the group of patients with a pancreatic tumor diameter more than 5 cm. Fortner *et al.* [8] have also indicated tumor size as a significant prognostic factor, thus indicating a good basis for selection of patients who should be subjected to surgery.

Tumor differentiation is also a good prognostic factor. In our study, all the patients with poorly differentiated tumors died within a five-year period (average survival 11 months), while the literature shows an average five-year survival of 16.5 months (14.1%) in patients with well and moderately differentiated tumors and 13.2 months (8.2%) in patients with poorly differentiated tumors [6].

The lymph nodes were positive in 73% of our cases, and 78% of those patients did not survive. There was no significant statistical difference between patients with positive lymph nodes and those with negative ones.

Conclusion

The relation between endometrial carcinoma, obesity and insulin-dependent diabetes in women prompts the necessity of timely screening (primarily laboratory), for possible pancreatic carcinoma. Even a 9% relation between pancreatic carcinoma and endometrial carcinoma in insulin-dependent women necessitates proper screening.

Pancreatic carcinoma is a systemic disease, at least at the time of diagnosis, with existent diagnostic possibilities.

Most patients who survive a five-year period (a very small number of patients) die later from the consequences of the primary disease; endometrial carcinoma alone has a greater survival rate than when combined with pancreatic carcinoma.

Extensive surgery is needed in patients who have smaller tumors due to a high incidence of local carcinoma cell spread; thus the existence of lymphogenous dissemination (86%), positive lymph nodes (30%) and intra (extra) pancreatic neural infiltration (70%), i.e., 50% of the cases.

Endometrial carcinoma in the given group did not show a tendency to spread in relation to laboratory findings of pancreatic cancer deterioration.

The results of these, as well as other studies, show that early screening is crucial in obtaining timely, and for the time being primary, surgical therapy.

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