

## SHORT COMMUNIACATION

# Para-Aortic Lymph Node Metastasis in Pancreatic Cancer: The Dilemma of Whether to Continue Surgery

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Lymph node status is a critical prognostic factor for patients with pancreatic head cancer [1, 2, 3, 4, 5]. Peripancreatic nodes are the first to be involved. The para-aortic lymph nodes are involved later, via the lymphatics network surrounding the posterior pancreatoduodenal, superior mesenteric and common hepatic arteries [1, 2, 3, 4, 5]. Para-aortic lymph node involvement is considered M1 in TNM and in the Japanese Pancreas Society Classification of Pancreatic Cancer [6]. The incidence of positive para-aortic lymph nodes in patients with pancreatic head cancer is not well defined but in published series it ranges from 11 to 26%, and is even higher when the tumor is located in the uncinate process [2, 3, 6, 7]. Patients with positive para-aortic lymph nodes have poorer survival, but the prognostic significance of the condition has not been clearly established in the literature [5, 7].

The best strategy for para-aortic lymph nodes during surgery for pancreatic head cancer is controversial [2, 3]. Standard lymphadenectomy for pancreatoduodenectomy was defined by the International Study Group on Pancreatic Surgery (ISGPS) and includes lymph node stations 5, 6, 8a, 12b1, 12b2, 12c, 13 a, 13b, 14 a, 14b, 17 a and 17 b [4]. Routine resection of lymph node station 16 (para-aortic lymph node) was not recommended by the ISGPS, and no consensus was reached on lymph node station 16b1 [4, 5]. The ISGPS recommends selective removal of a suspected lymph node outside the resection area by frozen section [4]. For their part, the Chinese Study Group of Pancreatic Cancer suggests resection of lymph node station 16 (16a2 and 16b1) when it is not involved [3].

Preoperative diagnosis of para-aortic lymph nodes involvement is difficult [1, 5, 6]. In the literature there is no consensus on the best way to diagnose a positive para-aortic lymph node. Usually surgeons are obliged to make decisions intraoperatively. The aortocaval region is assessed after the Kocher maneuver; if an apparently

positive node is visualized or palpated, it is resected [1]. However, as this procedure is not performed systematically, there are no data regarding its effectiveness. Sampling of para-aortic lymph nodes and intraoperative histological study may be a good option, and some authors report a sensitivity of 70% [5].

The most widely accepted management, when a positive para-aortic lymph node is suspected, is performing resection and intraoperative evaluation [1]. We proceed with the pancreatoduodenectomy when a para-aortic lymph node is negative, but if it is positive there are two possibilities: either we stop surgery, on the grounds that a positive para-aortic lymph node is an absolute contraindication for pancreatic resection, or we complete the pancreatoduodenectomy [1, 6].

Many authors think that surgery should be stopped because of the extremely poor prognosis in patients with positive para-aortic lymph nodes [6]. The median survival time after pancreatoduodenectomy with positive para-aortic lymph nodes has been reported to be between five and 17 months [6, 7]; disease-free survival has been estimated to be only six months [3], two-year survival to range between 0 and 18%, and three-year survival between 0 and 11% [4, 5, 7]. Doi *et al.* reported that 84% of operated patients who had positive para-aortic lymph nodes died within one year [8]. These data are very similar to those recorded in patients with unresected pancreas cancer who received chemotherapy or palliative care [5]; therefore, many surgeons think that other non-surgical strategies should be considered in patients with positive para-aortic lymph nodes [8].

Some surgeons have noted a clear association between positive para-aortic lymph nodes and poor prognosis, but published series revealed that positive para-aortic lymph nodes are not an independent prognostic factor and these data are obtained from retrospective studies [6, 7]. In fact, some studies suggest that a subgroup of patients with positive para-aortic lymph nodes could benefit from resection [2, 3, 7]. Factors associated with better prognosis in these patients with resectable tumors and positive para-aortic lymph nodes are: lymph node ratio <0.25, low levels of tumor markers and tumor size <3 cm [2]. Sho *et al.* obtained better results in patients with positive para-

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aortic lymph nodes than other series, probably thanks to new adjuvant chemotherapy [6].

In conclusion, patients with pancreatic head cancer and positive para-aortic lymph nodes clearly have poor prognosis. Although the ISGPS defines the lymph node stations that should be included in standard lymphadenectomy for pancreatoduodenectomy, there is no real consensus on what to do with lymph node station 16 during pancreatoduodenectomy. Classically a surgeon who finds a positive para-aortic lymph node stops surgery, but there may be a small, as yet undefined, group of patients who could benefit from resection. Prospective randomized clinical trials are needed to explore this interesting topic further.

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### Conflict of Interest

Authors declare to have no conflict of interest.

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