

Impact of Vascular anomalies on pancreatoduodenectomy procedure

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Introduction:

One of the critical steps during Pancreato-duodenectomy (PD) procedure lies in identifying the complicated vascular anatomy of the resected area. The blood supply usually stems from branches of the celiac and the superior mesenteric arteries. However, only in 55% -79% of surgeries, the anatomy of the blood vessels encountered by the surgeon is considered normal, while in the remaining cases, there are vascular variations that make these surgeries even more challenging. Any change or deviation from the known surgical course of PD makes surgery difficult and can result in an increase in intra/post-operative complications. In order to reduce difficulties encountered during PD, as well as reducing complication rates and improving surgical outcomes, a preliminary design, which includes preoperative identification of anatomical variations, is needed. The most accurate and accessible tool for identifying such variations being Computed Tomographic Angiography (CTA).

Objective:

The aim of this retrospective study is to assess the prevalence of vascular anomalies encountered during PD and examine whether there is an association between these anomalies and intra/post-operative morbidity and mortality.

Methods:

A retrospective study over 5 years was performed at the HPB and Surgical Oncology Unit, Rambam Health Care Campus, Haifa, Israel. The charts of all patients submitted to PD were reviewed, and all patients with vascular anomalies were included. The type of anatomical variant as well as other information were collected. For statistical purposes, the group of patients with vascular anomalies were compared to a control group with identical demographic characteristics. A statistical analysis on possible association between vascular anomalies and intra/post-operative complications (mainly bleeding) was performed.

Results:

During the aforementioned period, 202 patients underwent PD, and in 41 (20.3%) vascular anomalies were identified. The majority of these patients (32/41) had single anatomical variant, where two and three anatomical variants were identified in 7 and 2 patients, respectively. The most common vascular anomaly was Replaced Right Hepatic Artery, noticed in 34 patients (83%). The most common indication for PD for both groups (anatomical variant and control group) was pancreas adenocarcinoma (56%). Intraoperative complication, in the form of bleeding, developed in 6/41 patients (14.6%) of the anatomical variant group and none in the control group. Post-operative complication rates, including Post pancreatoduodenectomy Hemorrhage (PPH), post-operative pancreatic fistula (POPF), intra-abdominal abscess and wound infection were almost identical for both groups. One case of death within 30 days occurred, and it was in the anatomical variant group.

Conclusions:

Anatomical Vascular anomalies are a common variant encountered during PD, with RRHA being the most common. Although post-operative morbidity and mortality is not affected by the presence of these anomalies, intra-operative bleeding rate is higher in this specific group, thus; a pre-operative diagnosis by means of CTA is mandatory.

Biography

Dr Safi Khuri, MD, is a Senior General Surgeon and an attending physician at the HepatoPancreatoBiliary (HPB) and Surgical Oncology Unit, Rambam Health Care Campus, Haifa, Israel. Due to his ability to meet deadlines and go the extra miles, Dr Khuri completed a number of important roles during his career, such as being the chief resident for 3 consecutive years during general surgery residency program, director of the internship program at his department for several years, as well as, being the tutor for several groups of medical students. He is active socially at his home town (Ibillin), as a volunteer in the social scouts and health care organization.