

## Celiac Plexus Neurolysis and Complications Associated with Splanchnicectomy

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### DESCRIPTION

#### Adenocarcinoma

Adenocarcinoma of the pancreas is the world's fifth leading cause of cancer death. Curative resection is rarely an option because patients frequently present with locally advanced or metastatic disease. The treatment for these unfortunate patients is frequently restricted to palliation. Palliation's primary goal is to keep patients from experiencing painful side effects of cancer progression, such as obstruction of the common bile duct and/or duodenum and abdominal pain from malignant infiltration into the celiac plexus. Pain affects up to 90% of pancreatic cancer patients. The two palliative interventions have received attention: Celiac neurolysis and splanchnic neurectomy. For many years, Celiac Plexus Neurolysis (CPN) and splanchnicectomy have been studied.

#### Celiac Plexus Neurolysis (CPN)

CPN, which was first described in 1914, can now be performed percutaneously, during a laparotomy, or under the guidance of Endoscopic Ultrasound (EUS). Alcohol is usually injected into the plexus, but it can also be injected directly into the ganglia. Although steroid injections have been prescribed for CPN, they are more commonly used for chronic pancreatitis pain than for pancreatic cancer pain.

**Complications:** CPN complications are uncommon, occurring in only 1.5%-2% of patients. However, complications such as transient, usually asymptomatic hypotension, retroperitoneal abscess, and severe self-limited post-procedural pain are possible. Post-procedural diarrhoea and hypotension due to sympathetic blockade are examples of transient complications. There is also a risk of the neurolytic agent spreading cephalically, which could involve the cardiac nerves and plexus. Spinal complications, particularly with posterior approaches; fortunately, these are uncommon, occurring in less than 1% of patients. There are lower extremity weakness, paresthesias, and paraplegia. This is

most likely due to the alcohol injection causing spasm or thrombosis of the Adamkiewicz Artery, which supplies the inferior spinal cord.

#### Thoracoscopic splanchnicectomy

Palliative chemical splanchnicectomy was first described in 1969. Splanchnicectomy was first performed under direct vision during thoracotomy and was then combined with sympathectomy. The use of a thoracoscope to assist with splanchnicectomy for pain relief associated with pancreatic cancer was later described in the British Journal of Surgery in 1993.

We ensure that patients have failed medical management before considering splanchnicectomy. Medical management failure is a subjective opinion, but if a patient's pain can be controlled with fewer than three daily doses of moderate strength narcotics and they can live a productive life, surgical management may be avoided or at least postponed. We define pain control as a patient rating his or her pain as 3/10 on a visual analogue scale, and a productive life as being able to leave one's home and/or complete daily living activities in accordance with the patient's expectations.

**Complications:** Splanchnicectomy complications are uncommon, occurring in less than 2% of patients. Specific complications, as with other thoracoscopic procedures, include pneumothorax, chylothorax, hemothorax, the need for a thoracotomy, persistent pain, transient hypotension, and diarrhoea.

### CONCLUSION

Pancreatic cancer is a common and often fatal disease. The pain management is a critical component of this disease's palliation. Given the risks of high-dose narcotics, interventional approaches involving neurolysis and/or neurectomy are appealing. Regardless, each method appears to be safe, effective, and technically simple to implement. There is little reason for any patient with this disease to experience abdominal pain without first attempting celiac plexus block or splanchnicectomy.

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