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JIPMER Puducherry comes up with an innovative surgical technique for pancreatic cancer

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The robotic-assisted surgery technique enhances precision and oncological outcomes



Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER Puducherry has announced a breakthrough in pancreatic cancer treatment with the development of a novel robotic-assisted surgery technique.

Conceptualised by Dr Kalayarasan, a leading robotic surgeon, this pioneering approach has set a new benchmark in precision, reducing complications and improving recovery for patients battling one of the deadliest forms of cancer.

This cutting-edge technique leverages the advanced da Vinci robotic system to perform the intricate pancreaticoduodenectomy (PD) procedure with unparalleled accuracy. A key innovation lies in the precise and systematic vascular control technique, which minimises blood loss and enhances the chances of complete tumour removal (R0 resection).

By carefully identifying and controlling key vessels – such as the pancreatoduodenal arteries (inferior and superior) and pancreatic veins (posterior, anterior, superior, and inferior), this technique ensures safe vascular management, reducing the risk of complications like bleeding, which is a common challenge in pancreatic surgery.

This meticulous approach involves a detailed sequence of vessel control, starting with the gastrocolic trunk and progressing to the remaining pancreatoduodenal vessels. The systematic control of these critical vessels, in contrast to blind dissection, significantly reduces the likelihood of haemorrhage, a frequent issue in traditional procedures.

Additionally, the technique improves oncological outcomes by ensuring an R0 resection, where the tumour is completely removed with clear margins. One of the most important margins to address during the procedure is the superior mesenteric artery margin. If not carefully approached, this margin can become positive, leading to recurrence. However, following this method ensures a close and precise resection, thereby improving oncological control and patient outcomes. The innovation not only enhances the safety of the procedure but also plays a pivotal role in preventing recurrence and improving long-term survival rates for patients undergoing pancreatic surgery.

Recently, a 58-year-old patient with advanced pancreatic cancer and a history of chronic pancreatitis underwent the procedure at JIPMER. The surgery achieved a complete tumour resection, enabling the patient to return home within just five days. Early initiation of adjuvant chemotherapy was possible due to the patient’s rapid recovery, showcasing the immense potential of this advanced technology.

Over 100 pancreatic cancer surgeries have been successfully performed using this technique.