# CURRENT CYSTIC DUCT CLOSURE METHODS AND THEIR IMPACT ON COMPLICATIONS LAPAROSCOPIC CHOLECYSTECTOMY

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**Background:** For the surgical treatment of gallbladder disorders, laparoscopic cholecystectomy (LC) has emerged as the gold standard in recent years. However, a review of the literature shows that there is still a considerable risk of problems, especially bile leakage.

**Materials and Methods:** With a focus on cystic duct management strategies during LC, this research examined scholarly literature, including original papers, systematic reviews, and meta-analyses. Comparing contemporary approaches, including vessel-sealing devices, with conventional ligation and clipping procedures received special attention.

**Results:** The investigation showed that contemporary techniques based on energy-driven vessel-sealing devices greatly shorten operating times, but they also have some technical drawbacks and may increase the risk of certain issues. The ligation procedure (suturing), on the other hand, requires sophisticated manual dexterity and specialised surgical abilities, but it shows a decreased complication rate and good cost-effectiveness.

**Discussion:** A key factor in lowering post-operative complications in LC is the choice of cystic duct closure procedure. Even while contemporary energy devices reduce the length of surgery, further research is needed to verify their long-term safety and effectiveness profile in comparison to mechanical techniques. The ligation technique

seems to be a promising option because of its individualised approach, economic efficiency, and low incidence of bile leakage, even if it has a higher learning curve for surgeons.

**Conclusions:** A customised strategy to cystic duct treatment that takes into consideration the distinct anatomical and pathological characteristics of each patient is necessary for successful LC and the reduction of surgical risks. In order to provide safer and more efficient procedures and eventually raise the standard of care for patients with gallbladder disorders, additional research in this area is crucial.

Suggestions: In light of the findings and the conversation, the following are suggested:

To assess the effectiveness and safety of different cystic duct closure techniques, do more prospective trials.

Provide specialised training programs to help surgeons become proficient in advanced ductal management procedures, including as intracorporeal suturing and ligation. To guarantee ongoing quality improvement in surgical treatment, establish a standardised monitoring and evaluation system for post-laparoscopic complications.

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