

Usefulness of sealant fibrin glue (TachoComb) in laparoscopic partial nephrectomy: Does it provide complete hemostasis without parenchymal suture?.

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Abstract:

Introduction: Although it has been performed worldwide, laparoscopic partial nephrectomy (LPN) is still considered a challenging operation because of the difficulty of parenchymal suture to achieve hemostasis. Purpose: We examined whether parenchymal suture in LRP can be skipped with the use of sealant fibrin glue (TachoComb). Materials and Methods: A miniature pig under general anesthesia and pneumoperitoneum was studied for this purpose. Parenchymal dissection at various depths (within cortex, extending to medulla, and open to collecting system) was performed under temporary arterial clamping. Sealant fibrin glue (TachoComb) was affixed immediately on the resection surface and compressed for several minutes. Subsequently, degree of hemostasis was observed after release of the arterial clamp. Systolic blood pressure was maintained at about 80mmHg during the experiment. Results: Despite dissection within the renal cortex (at interlobular artery level), sufficient hemostasis could not be achieved with glue application. However, satisfactory hemostasis was obtained when the arterial cutting plane on the resection surface was cauterized with a bipolar electrode. Similar findings were observed even when parenchymal dissection reached more deep levels such as the central adipose tissue. Conclusions: Complete hemostasis cannot be obtained with use of sealant fibrin glue (TachoComb) alone in LRP. However, TachoComb may be useful when arteries on the resection surface have been appropriately cauterized.