

Packing of Renal Fossa: Useful Technique for Intractable Bleeding after Open Pyelolithotomy Surgery

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ABSTRACT

There is no documented study to indicate the role of prolonged packing of renal fossa (24 to 48 hours) to control bleeding in life threatening haemorrhage following open pyelolithotomy without compromise in the renal functions. On the contrary emergency nephrectomy was performed for intractable bleeding during renal stone surgery in peripheral hospitals. Several studies have shown the usefulness of temporary packing to control bleeding in liver injuries and following open heart operations. Packing of the renal fossa with laparotomy pads in unstable patients, and transferring the patient to the surgical intensive care unit (ICU) is also described in trauma but not in controlling bleeding after open pyelolithotomy. This study comprises of three such patients whose kidneys were salvaged by a simple procedure of temporary packing of renal fossa for period of 24-48 hours who had developed life threatening haemorrhage after open pyelolithotomy. This technique is simple and worth trying especially for surgeons who are contemplating nephrectomy as prolonged packing has not lead to any compromise in renal functions. The aim of this manuscript is very limited and clear. Packing is not a licence to carry out open pyelolithotomy without proper expertise and local backup or resources. Principles of safe and ethical surgical practice should never be violated as it can lead to medico legal complications.

KEYWORDS: Intractable bleeding, open pyelolithotomy, packing, renal fossa

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INTRODUCTION

Open surgical removal of staghorn calculi was at one time considered the “gold standard” to which all other forms of stone removal were compared. Currently, open surgery is performed infrequently with the procedure being used in <1% of patients undergoing stone removal. Open surgery is used most commonly to manage patients with complex stag horn calculi.^[1]

CASE REPORTS

Case 1

A 65 year old man was taken up for open pyelolithotomy for

large staghorn calculus by a urologist in a Medical college. I was called for help as the patient started having intractable bleeding after the removal of staghorn calculus. The urologist started contemplating nephrectomy as a desperate measure. I suggested to him to pack the renal fossa with roller gauzes as neither pre operative IVP nor B negative blood was not available in the blood bank. The renal fossa was packed with three long roller gauze packs, as bleeding continued after approximation of pyelotomy incision with three interrupted 3-0 vicryl sutures. One roll of gauze was placed over the pyelotomy bleeding or oozing site, second roll of gauze was placed on the medial side of the kidney and third roll of gauze was placed on the lateral side of kidney to fill the renal fossa. All these rolls were tied together and brought out from the posterior end of the main wound. The main wound was closed in layers for better tamponade effect. One 30F tube drain was also kept which was brought out from a separate stab incision. The patient was shifted to the high dependency unit (HDU) for post operative monitoring. All three packs were removed under sedation in the HDU after 24 hours. The patient had uneventful post operative course and was discharged on 10th post operative day after suture removal. The renal functions were found to be normal at the time of discharge.

Case 2

A 45 year old male patient who presented with multiple calculi



Figure 1: KUB showing left stag horn calculi



Figure 2: Preoperative IVU showing kidney function



Figure 3: Removed left stag horn calculi



Figure 4: IVU (six months after 48 hours packing) showing good renal function

mimicking a large stag horn calculus in left Kidney [Figure 1]. The pre operative IVP/ IVU showed Bilateral functioning kidneys [Figure 2]. The patient developed intractable bleeding when one of the two small stones was retrieved [Figure 3], possibly due to injury to interlober/segmental vessels. The patient was managed by packing of renal fossa with three long roller gauze packs as bleeding continued after approximation of pyelotomy incision with three interrupted 3-0 vicryl sutures. All three packs were removed after 48 hrs in the post operative ward under sedation. The patient's recovery was uneventful. IVP/IVU done after six months showed good renal function [Figure 4].

Case 3

A 62 year old female patient had a large staghorn calculus. IVP showed intra renal pelvis. She developed intractable bleeding after calculus was removed. She was managed with packing of renal fossa. Packs were removed in the ward under sedation. She developed urinary fistula which closed spontaneously after 2 weeks. The renal functions were normal even though packs were kept in renal fossa for more than 36 hrs.

DISCUSSION

Open pyelolithotomy constitutes less than 1% of all stone removal surgeries in the western countries. India and other developing countries open pyelolithotomy is still prevalent. Prolonged packing of renal fossa has not been described before except for renal trauma. On the contrary two nephrectomies have been reported to control intractable bleeding after open pyelolithotomy performed at a district hospital in Pakistan.^[2] Moreover procedures like salvage nephrectomy especially for benign procedures are seldom reported because of its medico-legal implications. Bouboulis and others have described the role of packing of the chest after cardiac procedures for intractable bleeding as it allows a reasonable patient salvage rate.^[3] Perihepatic packing is also described in literature as an adjunct in obtaining hemostasis in coagulopathy patients sustaining major liver injuries. Survival was found to be good (83% to 90%) in patients believed otherwise to be unsalvageable^[1,4,5] and in 77%, packing helped achieve hemostasis which was not otherwise possible.^[6] In unstable patients, packing of the renal fossa with laparotomy pads and transferring the patient to the surgical intensive care

unit (ICU) is best according to the European guidelines on urological trauma and a planned second-look laparotomy is better than time-consuming primary reconstruction.^[7] Packing of renal fossa is a simple and reproducible procedure which is worth trying for salvaging each and every kidney especially in surgery for benign renal disease. Rule of evidence does not apply in such case as aptly stated by Meakins JL “the development of surgical procedures and their introduction into practice has not depended upon the randomised control trials (RCT) but rather upon an enthusiast performing a case series, sometimes with clearly defined results. Should all operations and procedures be evaluated by a randomized control trial (RCT)? Clearly not, and the levels of evidence support this quite clearly with the “all or none” research category as level 1c. This relates to frequent clinical situations requiring a solution often immediate, e.g., pus, a ruptured aneurysm, a sucking chest wound, that do not lend themselves to a trial, as the control regimen (doing nothing) would lead to death”.^[8]

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