Cost Analysis of Robotic versus Open Partial Nephrectomy

Introduction and Objectives: Current trends show that Robotic Partial Nephrectomy (RPN) has become more feasible than the laparoscopic approach due to facilitation of renorraphy and reduced ischaemic times. Accepting this change in practice is hotly debated on clinical and economic grounds. We analyzed cost implications of RPN and compared with the open approach (OPN).
Materials and Methods: All data was recorded from a prospectively collected renal cancer database. Management staff provided financial spreadsheets. Costs of capital purchase were excluded.
Results: There 167 OPN and 29 RPN were compared. Mean tumour size was larger in OPN (P=0.0001) and imperative patients were more common in OPN (P=0.0471). A significant difference was observed in blood loss (P<0.0001), in blood transfusion (P<0.0001) and length of hospital stay (P<0.0001) in favour of RPN. Average theatre cost for OPN was £703.40 and RPN was £2470.41. Cost of mean hospital stay was £2316 (plus blood transfusion) and £1152 for OPN and RPN respectively. Therefore, total cost for OPN was £3019.40 and RPN £3622.41. Final analysis results in RPN being £603.01 more than OPN. Servicing would inflate RPN costs by an estimated £743.28.
Conclusions: We have shown that the cost of RPN is not excessive compared to OPN (before servicing and purchase costs) and should not be a deterrent to accepting this approach. Overall costs in servicing and purchase can be diluted by the use of robotics for multiple operations and if shared with other departments.