

Surgical Scar Location Preference for Pediatric Kidney and Pelvic Surgery: A Crowdsourced Survey

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Purpose: The benefits of minimally invasive surgery in pediatric urology, such as reduced length of hospital stay and postoperative pain, are less predictable compared to findings in the adult literature. We evaluated the choices that adult patients make for themselves and their children regarding scar location.

Materials and Methods: We surveyed the preference for scar location/size based on surgery for bladder and kidney procedures with additional questions assessing the impact of a hidden incision, length of hospital stay and pain. The survey was posted to Amazon® Mechanical Turk®.

Results: We analyzed a total of 954 completed surveys. Previous surgical history was reported in 660 surveys (69%) with scar bother reported in 357 (54.2%). For pelvic surgery the initial choice was a Pfannenstiel incision for 434 respondents (45.5%), laparoscopy port incisions for 392 (41.1%) and no preference for incision location for 126 (13.2%). When incisions were illustrated relative to undergarments, 718 respondents (75.3%) chose Pfannenstiel. For kidney surgery 567 respondents (59.4%) initially chose the dorsal lumbotomy incision, 170 (17.8%) chose a flank incision, 105 (11.0%) chose laparoscopy ports and 110 (11.5%) had no preference. Respondents were told that minimally invasive surgery might result in less pain/length of hospital stay and were asked to restate the incision choice. For pelvic surgery 232 of 434 respondents (53.5%) who had chosen Pfannenstiel and 282 of 394 (71.6%) who had chosen laparoscopy remained consistent ($p < 0.001$). For kidney surgery 96 respondents (56.5%) who chose a flank incision, 322 (56.8%) who chose dorsal lumbotomy and 68 (64.2%) who chose laparoscopy remained consistent ($p = 0.349$). Agreement between the incision choice by respondent as a child and for a child was 82% ($\kappa = 0.69$) for pelvic surgery and 84.6% ($\kappa = 0.75$) for kidney surgery.

Conclusions: The smallest incision is not always the patient preferred incision, particularly in childhood when pain, length of hospital stay and blood loss may be equivocal among approaches. Discussion of surgical treatment options should include scar length, location and relationship to undergarments.

Key Words: urinary bladder, kidney, cicatrix, minimally invasive surgical procedures, surgical wound

SURGICAL options have progressed toward MIS. Laparoscopy with or without robot assistance has gained

popularity due to shorter LOS, smaller incisions, and less blood loss and postoperative pain for most procedures,

Abbreviations and Acronyms

AMT = Amazon Mechanical Turk

DL = dorsal lumbotomy

LOS = length of stay

MIS = minimally invasive surgery

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especially in adult patients.¹⁻³ MIS specialization has progressed to the point where trainees may have limited open surgical experience, requiring the creation of open surgery fellowship training.⁴

Surgeons strive to perform procedures through the smallest incisions possible to improve the patient experience and maximize cosmesis. However, this approach may not account for patient preferences influenced by self-image, prior surgical experience and pain perception. We evaluated the choices adults that make for themselves and their children regarding scar location for common pediatric urological procedures of the pelvis and retroperitoneum. We hypothesized that individuals would prefer potentially larger, concealed incisions over smaller, directly visible incisions.

METHODS

Internal review board review deemed this nonhuman subjects research. A survey was created assessing a preference for surgical scar location and size based on procedures for pelvic or kidney surgery (supplementary material, <http://jurology.com/>). Respondents were asked which approach they preferred if they underwent the surgery as a child. For pelvic surgery, incision options included Pfannenstiel or abdominally located laparoscopy ports. For kidney surgery options included DL, flank or laparoscopic ports. For pelvic surgery, a followup question assessed the impact of a hidden incision on preference with an additional drawing depicting scar location relative to undergarments (fig. 1). For kidney and pelvic surgery, after asking the initial scar location preference,

respondents were asked whether an incision with less pain and LOS (laparoscopy) would alter the incision choice. Finally, the impact of a barely noticeable, healed incision was assessed by asking respondents to choose again.

Nonidentifying demographics were collected. For those reporting a history of prior surgery, basic surgical history was assessed along with scar bother. Scar bother was adapted from the AUA (American Urological Association) Symptom Index global bother scale, including not bothersome at all, bothers me a little, bothers me some or bothers me a lot.⁵ This bother scale was used due to a strong correlation with bothersome urinary symptoms in men with benign prostatic hyperplasia⁶ because to our knowledge a similar score measuring bothersome scar symptoms does not exist.

Branching logic was used to tailor questions to demographic responses. For example, surveyors were only asked about a detailed surgical history if they had undergone previous surgery or asked about incision preference for their child if they reported having children. The survey was proofread and tested on 1 medical and nonmedical personnel, in addition to the authors, prior to data collection.

The survey was administered anonymously through AMT (<https://www.mturk.com/>) via a survey link created in RedCAP (<https://projectredcap.org/>). AMT is a crowdsourcing internet marketplace where individuals can coordinate the use of humans to complete tasks in exchange for monetary compensation.

At the end of our survey, respondents were asked to submit the survey and copy a code confirming submission into AMT. If the survey was not expressly submitted upon completion and/or the code was not copied correctly, the survey responses were excluded and the respondent was not paid. Respondents were paid \$0.20 to complete the

Pelvic Surgery Incisions

Kidney Surgery Incisions

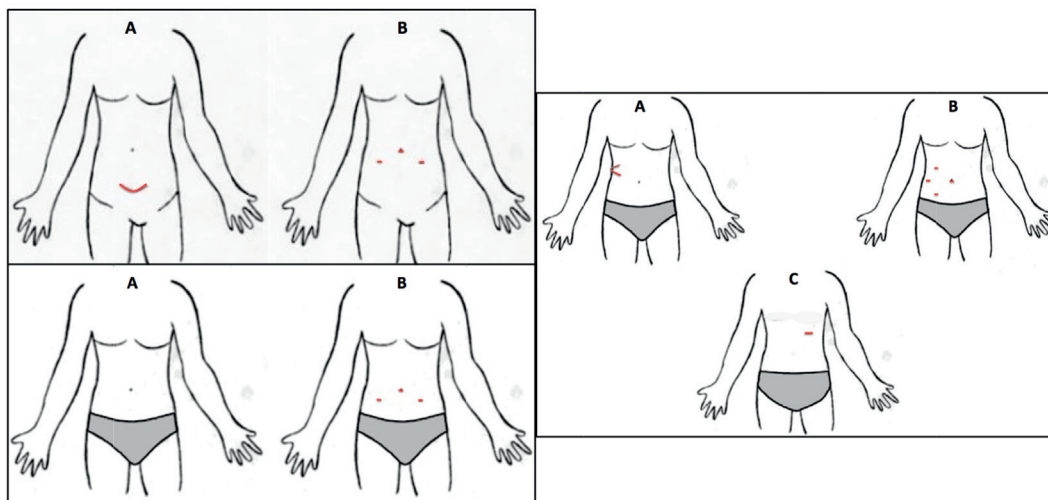


Figure 1. Pelvic and kidney surgery incisions (red marks) included with each question. Pelvic surgery incisions included Pfannenstiel (A) and 3-port laparoscopy (B). Pelvic surgery incisions are shown in relation to underwear, including flank (A) 4-port laparoscopy (B) and dorsal lumbotomy (C) kidney surgery incisions.

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