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# Impact of extraction-site location on wound infection rates after laparoscopic colorectal resection☆

DR. L. MATTHEW DEPPE (Red Wing, Minnesota): I'd also like to commend the authors for their efforts to study surgical site infections and identify risk factors, particularly specimen extraction site as these costs are substantial in each case, oftentimes over $10,000 in direct costs and indirect costs, including an increase in incisional hernia rate. This is the largest series that I'm aware of that looks at the actual specimen extraction site and infection risk, although there are several series that suggest an increase in hernia risk in patients who have incisions on the midline versus lateral. I have several questions.

First of all, as you state, the specimen extraction site does vary based on surgical preference or surgeon preference and also other anatomic factors, and I just wondered if you had identified any particular cause one would be selected.

The other second element is, is there any association or lack of association with deep organ space infection? Those are the questions I have. I would be interested in your response.

DR. LUCA STOCCHI (Cleveland, Ohio): I am the senior author of the paper just presented. With respect to the preference in the selection of the extraction sites, you're right in quoting surgeon preference as one important factor. The other important factor which we have not analyzed in this particular paper, but we did present in a previously published paper on the same data set, these, of course, as you also mentioned, the risk for incisional hernia. And in this respect, some of the conclusions can be replicated at that particular endpoint, meaning most of the times an incision of the extraction site is preferable to an incision in the midline in terms of reduction of the hernia site.

A notable exception to that, however, is the extraction site on the site that will be subsequently used to create the stoma. In that case, it's a very favorable site for reduction of surgical site infection but is associated with a high risk in our data set of subsequent hernia. With respect to deep organ space, there was no association between the incidence of deep organ space, infection and specific extraction site. Thank you.

DR. SUKAMAL SAHA (Flint, Michigan): Did you find any evidence of recurrence at the infection site at the trochar port or wherever the infection was compared to any other of the trochar placement?

DR. STOCCHI: You mean cancer occurrence or –

DR. SAHA: Yes.

DR. STOCCHI: I personally – so, first of all, this was not the topic of the presentation, so I cannot – I can only speculate personally on what I know and what I've seen, not based on the data that we just presented or other data. The recurrence at the extraction site is an extremely rare event as proven by prospective randomized trials, at least three, and I would say that in my experience I have a patient where a colleague of mine told me verbally over the phone that he had seen an extraction site, but, otherwise, in ten years of practice I have never seen one of my own or that I know of my colleagues, and we are a pretty large group.

DR. WILLIAM C. CIROCCO (Columbus, Ohio): Your take on bowel preparation, I may have missed it. It may have been in the talk.

DR. STOCCHI: Typically, we favor bowel preparation with oral antibiotics, and that has been our preference in all these, and perhaps we should have emphasized that, but this is reported in the paper.

DR MICHAEL A. VALENTE (Cleveland, Ohio): In terms of using the ostomy site for the extraction, are these patients split between, is this a permanent ostomy, because I know we sometimes make the incision a little bit bigger. Hernia rates, you know, for a permanent ileostomy is quite detrimental. I mean, are these mostly first stage for ulcerative colitis where you are going to take that stoma down anyways?

DR. STOCCHI: For the purpose of the Society, we retained these patients, but for the purpose of hernia assessment, all the temporary stoma sites were excluded, and so when I mention the data on hernia in the stoma site, I only refer to a permanent stoma creation.

DR. THEODOR ASGEIRSSON (Wyoming, Michigan): Is this all comers, these cases, both elective and emergent? That's one question. And the reason that I ask that, because these numbers are fairly high. With the enhanced recovery that we currently – the environment that we work in, you know, rates of about 2% in laparoscopic surgery is probably where we're getting to, so the value of making technical decision based on very low rate of infections is questionable. Because for me, as I do not do intracorporeal anastomoses, getting the right colon out through a low incision is hard because you need that transverse colon to do your extracorporeal anastomosis, so maybe address the question of elective versus emergent and then the rates that are fairly high in this data set.

DR. STOCCHI: Our data set was limited to elective procedures. It was based on a long data set, and perhaps we had refined further after 2011 the enhanced recovery protocol. We used to talk about fast track and so some improvement in this area might be reflected by more recent data. With respect to the overall infection site, I just need to remind that we have included conversion as an intent to treat analysis, and that is associated with a high rate. And our surgical infection rate within laparoscopic surgery during the period is comparable with the literature pertaining to that period.

☆ (Presentation given by Ipek Sapci, M.D.)

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0002-9610/

DR. THOMAS A. STELLATO (Cleveland, Ohio): Are wound protectors used on these cases, and are you able to put the specimen in bags before removing them?

DR. STOCCHI: We routinely use wound protectors in all the cases, but we did not put the specimen in bags. In the majority of cases, the specimen was extracted and then transected on the direct patient.