ADVANCES IN IBD

Current Developments in the Treatment of Inflammatory Bowel Diseases

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Managing Reduced Fecundity Following IBD-related Surgery

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G&H What specific IBD-related surgeries have been associated with fertility challenges in female patients?

PJ The best evidence for this phenomenon has come from studies of the ileal pouch anal anastamosis (IPAA) procedure, which has consistently been shown to negatively impact female reproductive capability. Women who have a total proctocolectomy with a permanent ileostomy undergo a dissection similar to the IPAA procedure, and it is assumed that this also results in decreased female fertility. However, there is little research that has directly examined fertility after proctocolectomy and end ileostomy.

G&H How prevalent is this problem in women of child-bearing age who undergo this surgery?

PJ The studies fairly uniformly suggest that approximately 50% of women who try to become pregnant after IPAA surgery are unsuccessful. One issue in comparing and pooling the statistics from all of the studies that have looked at women with pelvic pouches and their ability to become pregnant is that they have not used uniform measures of fertility. Some studies have surveyed women to see if they are trying to become pregnant and registered the length of time required to conceive. Others have based fecundity on the probability of becoming pregnant, per month of unprotected intercourse. Still others have designated a period of 1 year of unprotected sex with no pregnancy as infertility.

In our own study, we tried to make a comparison to the general population of North American women. We calculated an infertility rate of approximately 39% among women undergoing IPAA, compared to roughly 10% in the general population. However, another limitation, whenever we attempt to calculate a population-based infertility rate, is that we can only calculate the number of women who report infertility relative to all the women in the population, but all the women in the population are not trying to become pregnant. Therefore, the more pertinent measure is one that only examines women who are specifically trying to become pregnant. When we looked specifically at those women who tried to become pregnant after IPAA surgery, only 56% were successful. For those who are successful, some women require reproductive technologies. In our own study, 30% of women who became pregnant after IPAA used fertility treatments

G&H Is there any evidence suggesting that the IBD disease state can affect fertility?

PJ In patients with ulcerative colitis (UC), studies suggest that women under medical treatment do not appear to have decreased reproductive ability. These women most likely have mild or well-controlled disease. No study has looked at the ability to become pregnant among women with very active disease. The reality is that most of those women are probably not trying to become pregnant, which makes assessing the impact of their illness on fertility difficult.

G&H What is the physiologic basis for the reduced reproductive ability among women receiving IPAA?

PJ It is believed that the problem relates to adhesions in the pelvis that occur after surgery, which alter the normal anatomic relationship between the fallopian tubes and the ovaries. This relationship is necessary for ovum transport and capture. One study demonstrated that many women who undergo IPAA have obstruction of one or both fallopian tubes after surgery and others end up with their fallopian tubes adhering to the pelvic floor. Another small study examined women who had undergone total proctocolectomy with a permanent ileostomy and basically showed the same findings. The overall theory from these findings is that adhesions result from surgical dissection in the pelvis. Scarring in the pelvis secondary to adhesions alters the normal anatomic relationship between the tubes and ovaries. Although this has not been definitively proven, it is what the evidence suggests.

G&H Is IPAA surgery a factor to be considered in the treatment of pediatric patients, before the

onset of puberty and child-bearing age?

PJ Pelvic pouch surgery is performed in the pediatric population. I am not aware of any studies that have followed these patients specifically to measure an effect of surgery on their fertility. This is certainly something that would need to be discussed with the patient and their family preoperatively. However, most surgery would not be conducted in pediatric patients until they are in their teens and have reached a mature stage in sexual development.

G&H What can be done for patients experiencing difficulty with conception after IBD-related surgery?

PJ The most important factor in treating women of child-bearing age who are considering surgery is to counsel them upfront as to the potential risks, so that they can weigh the possibility of avoiding this problem altogether. Some women may elect to undergo subtotal colectomy with an end ileostomy and defer pelvic dissection and pouch construction until they have completed their family. The subsequent proctectomy and IPAA can be deferred for years. For those women who decide to proceed with pouch surgery, recognizing the risk of infertility, approximately 50% will be able to conceive and have a normal pregnancy. For those who cannot, the only option at this time is reproductive technologies such as in-vitro fertilization. I am not aware of any studies that have compared the success of these technologies between women with a pouch and women without a pouch. However, there are numerous reports in the literature of women with a pouch successfully conceiving through reproductive technologies.

G&H Could you describe the differences in quality of life that are evident when comparing the ileostomy and complete pouch procedures?

PJ There are a number of small studies that have shown that overall quality of life (QOL) is similar among patients who have a pouch and those who have a permanent ileostomy. This most likely means that curing the underlying disease (UC) is the most important factor determining QOL.

The reality is that the pouch operation has been performed for approximately 25 years and has been accepted as the gold standard treatment. Very few young patients opt for a permanent ileostomy, simply because they do not want to live with the ileostomy. It is in some ways an issue of perceived QOL before the decision is made, rather than a significant difference that can be measured after the procedure. I tell my patients that they will have excellent QOL with either procedure, but the overwhelming majority prefers to avoid the permanent ileostomy.

G&H How do you approach the decision-making process with patients of child-bearing age who are candidates for surgical therapy?

PJ Again, this risk of infertility must be discussed with all women of child-bearing age. However, most young women considering surgery have active disease, have failed medical therapy, or have experienced unacceptable side effects of medical therapy. Thus, it would be a mistake to say that surgery should be avoided for this reason. This is where the option of a staged procedure should be considered. Patients can have the colon removed, have an ileostomy, recover and taper off steroids and immunosuppressive drugs, and then reassess the situation. Some women may find that they can live with the ileostomy for a few years while they have children. For women who decide that they do not want to live with an ileostomy in the long term, because of body-image and other issues, there is the option to proceed to a pouch operation.

It is also important to remember that there is a slight risk of sexual dysfunction in men who undergo IPAA, due to autonomic nerve injury resulting in retrograde ejaculation and impotence. These problems obviously have implications regarding reproduction and need to be discussed preoperatively.

G&H Are there other surgical options under investigation to minimize or eliminate the reproductive risks after surgery?

PJ Surgeons have described anecdotal experience performing oophoropexy, in which the ovaries and fallopian tubes are suspended at the top of the pelvis to try to avoid adhesions. There is no evidence, however, of the efficacy of this procedure. There has also been theoretic consideration of anti-adhesion barriers placed to minimize adhesions in the pelvis. Again, no data on the safety or effectiveness of these substances have been accrued.

Currently, women must make the decision to have a subtotal colectomy and defer pouch surgery until completing their family, or proceed with pouch surgery and, in effect, take their chances and consider reproductive technologies if they are subsequently unsuccessful becoming pregnant.

Suggested Reading

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