When Not to Pouch: Important Considerations for Patient Selection for Ileal Pouch–Anal Anastomosis

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Abstract: Ileal pouch–anal anastomosis (IPAA) is the preferred surgical treatment for patients who undergo colectomy and wish to avoid a permanent ileostomy. The overall outcomes are positive, with an improved quality of life and stable long-term pouch retention. However, certain conditions or disease states may be at a higher risk of pouch dysfunction or failure. For example, obese patients have an increased risk for postoperative complications. In addition, women with a history of obstetric complications and elderly patients with a history of sphincter damage or dysfunction may be at an increased risk for postoperative incontinence, although quality-of-life indices do not necessarily correlate with incontinence scores. Advanced age itself is not a contraindication to pouch surgery, and elderly patients can be considered for IPAA based on individual functionality and comorbidities. Pelvic radiation may lead to pouch dysfunction. Finally, patients with Crohn's disease and indeterminate colitis may have increased complications with IPAA, but highly specific patient selection leads to good rates of pouch retention. This article examines several clinical scenarios that require careful thought prior to considering IPAA.

Ileal pouch–anal anastomosis (IPAA, also referred to as pouch) has been the preferred surgical treatment for the majority of patients requiring colectomy who have ulcerative colitis (UC) and familial adenomatous polyposis since the procedure was first reported in 1978.[1,2] Select patients with indeterminate colitis (IC) or Crohn's disease (CD) may also undergo IPAA.[3] IPAA is typically created in a 2- or 3-stage procedure, although 1-stage procedures are also offered.[4] A main advantage of IPAA is the preservation of traditional bowel evacuation and the avoidance of a permanent ileostomy.

Most patients undergoing IPAA report good to excellent quality of life after surgery[5-8] and would undergo the operation again.[9,10] On average, patients report a median of 6 bowel movements per day after

Table 1. Manometric Pressures in IPAA Patients

Study	Resting Anal Sphincter Pressure (mm Hg)				Maximum Anal Squeeze Pressure (mm Hg)	
	Incontinent IPAA	Continent IPAA	Before IPAA	After IPAA	Before IPAA	After IPAA
Tomita et al[36]	32 (22-42)	66.3 (46-87)				
Tomita[26]	30 (21-40)	50 (34-67)				
Cullen and Kelly[28]			94 (86-102)	62 (54-70)	193 (180-206)	131 (116-146)
Halverson et al[35]			77 (13-175)	52 (10-145)	183 (25-447)	154 (24-440)
Stryker et al[31]			88 (80-96)	78 (73-83)	192 (177-207)	176 (166-186)
Gawad et al[7]				72 (43-115)		135 (61-213)

IPAA, ileal pouch–anal anastomosis.

IPAA.[5,9,11] IPAA patients have better outcomes in terms of body image compared to patients with ileostomies.[12] Moreover, IPAA has been reported to have little to no impact on the patient's professional or social life.[5] Overall pouch function is reported to be stable over time, with multiple studies evaluating outcomes up to 30 years or more after IPAA.[5,6,8,13,14]

Although there are excellent outcomes for the majority of patients undergoing IPAA, a minority of patients experience postoperative complications such as fecal incontinence, pouchitis, and CD. Patients with persistent pouch dysfunction have a suboptimal quality of life and are at an increased risk for pouch failure, which can be defined as the need for pouch excision and end ileostomy, diverting ileostomy for a prolonged period of time, or permanent diversion.[15] Overall long-term pouch failure rates range from 4.4% to 8.5%.[16-18] To maximize the likelihood of successful long-term pouch outcomes, thoughtful patient selection is essential. This article discusses several clinical scenarios requiring careful consideration prior to IPAA, including obesity, sphincter dysfunction or damage, advanced age, radiation therapy, and CD or IC.

Obesity

There is a worldwide obesity epidemic. In obese patients in general, surgery is frequently more technically challenging, often necessitating longer operation times.[19,20] Although patients with inflammatory bowel disease (IBD) may frequently be malnourished and underweight, there are increasing numbers of obese patients with IBD.[21] Obesity, defined as a body mass index of 30 or higher, has been associated with multiple post-IPAA complications.[20,22,23] Klos and colleagues reported significantly increased complications after IPAA, includ-

ing incisional hernias (relative risk [RR], 2.21), any pouch complication (RR, 1.96), anastomotic/pouch strictures (RR, 2.77), and inflammatory pouch complications (RR, 2.61).[23] The construction of IPAA in obese patients has also been associated with a longer operation time,[20,22] a prolonged inpatient stay,[22] and a higher risk for wound infection and anastomotic leak.[10]

However, obesity is not a complete contraindication to pouch surgery even though the condition increases the likelihood of complications after IPAA. Performing the procedure in obese patients is more technically challenging due to bulky mesentery and difficult intraabdominal and pelvic exposure.[10,23] Because IPAA is elective, it is advisable to encourage weight loss in obese patients prior to scheduling the procedure to promote optimal outcomes.

Sphincter Dysfunction or Damage

One of the benefits of IPAA is the ability to maintain anal sphincter function and preserve the normal route of evacuation. Both the internal anal sphincter (involuntary sphincter) and the external anal sphincter (voluntary sphincter) play important roles in the maintenance of continence. Intuitively, a decreased resting anal sphincter pressure in IPAA patients increases the risk of fecal incontinence.[24-26] Approximately 25% to 30% of pouch patients experience either major fecal incontinence or minor seepage.[24,27] The incidence of severe fecal incontinence ranges from 6% to 8%.[5,11] Nocturnal incontinence is more common than daytime incontinence.[24,28] Pouch patients with fecal incontinence report a decreased quality of life compared with continent pouch patients.[29,30]

IPAA can result in sphincter damage. The resting anal sphincter pressure in patients after IPAA is lower than in patients who have not undergone surgery (Table 1).[31-34]

The prevailing explanation for decreased anal sphincter pressure after IPAA has been attributed to damage to the internal and external anal sphincter during surgery, possibly from anal dilation and manipulation or mucosectomy.[28] Patients with stapled anastomoses have been noted to have less seepage and incontinence compared to patients with hand-sewn anastomoses.[35]

Part of the sphincter damage and dysfunction after IPAA may be reversible. In a small study of pediatric patients after IPAA, all patients had some soiling in the first 6 months after surgery (at least once or twice per day or once nightly), but by the end of a 3-year follow-up, none reported incontinence symptoms.[36] Indeed, for many patients, soiling may be worst in the early postoperative months (within 6 months of surgery) and may improve over months to years as anal sphincter pressures normalize.[34,36,37]

For patients with occasional fecal incontinence, antidiarrheal medications such as loperamide, tincture of opium, or diphenoxylate atropine are often used to control stool consistency and frequency. Another potential benefit of loperamide may be increased anal pressures. In a randomized, double-blind, placebo-controlled trial evaluating the effects of loperamide, the resting anal pressure and maximal squeeze pressure increased, along with a corresponding improvement in continence, after a week of treatment.[38] However, a single 16-mg dose of loperamide did not result in the same increase in resting anal pressure, suggesting a benefit only with sustained treatment with loperamide.[39]

When thinking about a patient's candidacy for IPAA, special attention should be paid to 2 patient populations that are at risk for sphincter dysfunction and damage: older and elderly patients and women with a history of obstetric complications. These 2 groups are discussed in detail below.

Older and Elderly Patients

In the general population, rates of fecal incontinence are higher with advanced age.[40] In the pouch literature, the definition of elderly or older varies by study. Moreover, the definition of fecal incontinence itself varies quite a bit, with evaluations ranging from daily to monthly.[41] Increased rates of fecal incontinence have been noted in older IPAA patients.[8] However, it is difficult to make firm conclusions given multiple age cutoffs and varied definitions of fecal incontinence.

Several studies suggest an increased rate of fecal incontinence in older or elderly patients. Dayton and Larsen evaluated 455 patients after IPAA, noting that daytime and nighttime stool frequency as well as incontinence episodes were significantly higher in patients older than 55 years.[42] Of note, preoperative anal resting

and squeeze pressures correlated with these postoperative findings in patients older than 55 years. Delaney and colleagues reported an increased rate of nocturnal seepage (but not full bowel movements) in pouch patients older than 65 years after 3, 5, and 10 years of follow-up when compared with younger patients.[43]

On the other hand, increasing age does not necessarily correlate with rates of incontinence after IPAA.[34,44-46] Kim and colleagues reported stable rates of fecal leakage of approximately 25% (at least 1 leakage of stool daily) across all age groups after IPAA.[47] In a retrospective cohort of 2000 IPAA patients subdivided by age at the time of surgery, a significantly higher percentage of patients older than 55 years reported incontinence at 1 and 3 years after IPAA when compared with younger patients.[45] However, at 5 and 10 years of follow-up, this difference in incontinence among older and younger patients was no longer significant. This retrospective study suggests that over time, some older patients may either have improvement in sphincter function or better management of incontinence (perhaps via diet or medication), but definitive evidence to support this assumption is needed.

Thus, older and elderly patients may have increased rates of incontinence after IPAA, but the data are mixed. Elderly patients, despite some incontinence, are able to thrive after pouch surgery. Surgical technique in elderly patients should be optimized to preserve sphincter function and improve functional outcomes. For example, given the lesser risk of sphincter dysfunction, a stapled anastomosis is preferred over a hand-sewn anastomosis.[48]

Women With a History of Obstetric Complications

Obstetric trauma during childbirth increases the risk for both short- and long-term anal sphincter dysfunction. The reported rate of fecal incontinence was 27% in a 30-year retrospective cohort of women with anal sphincter disruption during vaginal delivery.[49] Women undergoing IPAA who opted to have a vaginal delivery had a higher rate of sphincter defects and lower mean squeeze anal pressures compared to women who had a cesarean section.[50] Also, in a 30-year review of IPAA in approximately 1900 patients with UC, women had significantly more episodes of occasional or frequent daytime bowel incontinence than men.[8] Potentially, part of the increase in incontinence could be attributed to a history of childbirth in this cohort.

However, a history of vaginal delivery with obstetric injury is not an absolute contraindication to IPAA creation. Gearhart and colleagues reported successful IPAA in 17 women with a history of obstetric injuries such as episiotomy, prolonged labor, or forceps delivery.[27] Although sphincter defects were noted on preoperative endoanal ultrasound with corresponding low anal resting

pressures and shorter anal canal length on manometry, there were no significant differences in the severity of fecal incontinence or quality-of-life scores after IPAA.[27]

In women with a history of obstetric complications, it is important to take a careful history of soiling and seepage. If the patient has severe incontinence, creation of an IPAA is contraindicated, but continent ileostomies such as the Koch pouch could be considered. Likewise, if a continent woman with preexisting IPAA becomes pregnant, it is advisable to discuss the potential benefits of cesarean section for preserving the existing sphincter function.[50]

In summary, it is imperative to assess anal sphincter function prior to consideration of IPAA. A digital rectal examination should always be completed to evaluate for sphincter tone and dysfunction. Anorectal manometry evaluation of sphincter function should be considered prior to deliberation of IPAA in patients with questionable continence. Elderly patients with sphincter dysfunction and women with a history of obstetric complications should not be ruled out as candidates for IPAA without a candid discussion regarding postoperative expectations.

Patients of Advanced Age

As the current population ages, the prevalence of elderly patients with IBD is increasing. Approximately 15% of patients with IBD manifest their first symptoms after the age of 65 years.[51] Current guidelines do not specify an age cutoff at which IPAA should not be offered for older patients.[52,53] Designating a strict cutoff is difficult because, as previously mentioned, the definitions of older and elderly vary among publications, with 50, 55, 60, or 65 years being used as age cutoffs for studying outcomes.[43,45,54-57] Moreover, 2 patients of the same age can differ tremendously in suitability for surgery when taking into account comorbidities and functional status.

Numerous studies report the safety and feasibility of IPAA in elderly patients.[34,43-46,58-61] No increase in surgical morbidity or mortality was noted with pouch surgery in elderly patients.[43,54,55,59,61,62] The rate of pouch failure in elderly patients undergoing IPAA was reported in a study to be 4.8%, which is similar to the rates of pouch failure in younger age groups.[43] Considered altogether, these studies suggest that age alone is not a predictor of negative outcomes after pouch surgery in elderly patients.[51]

More reliable prognosticators of negative outcomes after IPAA in elderly patients include concomitant comorbidities and the need for emergent surgery.[63] Elderly patients undergoing IPAA have been noted to have a longer length of inpatient stay, fewer single-stage surgeries, higher laparoscopic-to-open conversion rates, and more ileostomies.[56,57] The postoperative, elderly IPAA patient is at an increased risk of dehydration, which may be related to higher rates of diverting ileostomies.[54,64]

The elderly IBD patient may be a complex surgical candidate. Older patients undergoing IPAA frequently have comorbidities such as chronic obstructive pulmonary disease, diabetes, hypertension, or congestive heart failure.[56] Also, elderly patients have had more prior abdominal surgeries compared to younger patients.[57] In addition to assessing for comorbidities that may affect surgical risk, the elderly patient's gait and mobility should be evaluated because the frequency of stooling may increase after surgery, necessitating more frequent daytime and nocturnal ambulation to and from the restroom. In short, the patient as a whole must be taken into account when determining suitability for IPAA.

The data regarding long-term, age-related pouch function are mixed. In a prospective study of 1875 IPAA patients, pouch function, including the number of daytime and nocturnal bowel movements, remained essentially stable over 30 years of follow-up.[8] The risk of pouchitis, a common complication, is independent of age at the time of pouch creation.[65,66] On the other hand, age-related pouch function has been noted to change over time. Although a few longitudinal studies have reported some pouch functional deterioration over time across all age groups,[60,67] other research has noted an increased risk of pouch failure only if the IPAA was performed in patients 55 years or older.[43] Nocturnal stool frequency has been noted to increase from 1 to 2 bowel movements per night over 15 to 30 years of follow-up.[8,68]

Despite a reported decline in pouch function over time (defined as increased pad usage and incontinence), patient satisfaction and quality-of-life data remain stable in older age groups.[8,60] More than 80% of patients considered to be elderly at the time of pouch creation would undergo IPAA again or would recommend the surgery to others.[43] The majority of elderly patients undergoing IPAA noted improvement in quality-of-life considerations related to work and family life.[54]

In summary, being elderly is not a strict contraindication for IPAA. Many elderly patients are able to safely undergo IPAA with good quality of life and comparable pouch outcomes. Preoperative screening and appropriate patient selection (taking into account comorbidities, functional status, and degree of frailty) are key.

Radiation Therapy

Radiation therapy to the bowels carries a risk of acute and long-term toxicity, occasionally leading to complications such as rectal bleeding, diarrhea, and incontinence.[69] Pelvic irradiation may cause tissue damage to the bowel

by way of vascular injury, ischemia, and production of oxygen free radicals.[70] Radiation changes can occur anywhere in the gastrointestinal tract. The small bowel is more susceptible to radiation injury than the colon.[71] Because the ileal pouch is situated in the pelvis, the pouch is at risk for radiation injury in patients requiring pelvic radiation.

Radiation in patients who have pelvic pouches can affect pouch function. Radiation pouchitis, characterized by histologic changes such as telangiectatic vessels, focal perivascular hyalinization, and thickened vessel walls, has been described in a man who was asymptomatic after undergoing IPAA who later received external beam radiation therapy for prostate cancer.[71] Also, irradiated ileal pouches have been noted to exhibit decreased capacity and compliance compared with nonirradiated pouches.[72] Even though the colon is less susceptible to injury compared to the small bowel, patients with colonic pouches who underwent radiation therapy experienced significantly increased diarrhea and nocturnal defecation in a study of 28 patients being treated for rectal cancer.[72]

More focused radiation may also affect the pouch, although the effects may be more limited. Prostate brachytherapy limits the radiation field. Theoretically, brachytherapy has a lower risk of damage to the pouch by reducing posterior margins and extracapsular radiation exposure.[69] However, short- and long-term changes in pouch function still occur. For example, a patient with IPAA developed chronic pouchitis after brachytherapy for prostate cancer.[69] Also, in a small cohort of 5 IPAA patients receiving prostate brachytherapy, bowel frequency increased in all patients but returned to baseline within 4 months.[73]

Pelvic radiation preceding IPAA creation also affects future pouch outcomes. In a cohort of 56 patients with colon or rectal cancer undergoing IPAA, 9 patients received preoperative radiation therapy.[74] Chronic pouchitis, defined as a Pouchitis Disease Activity Index score of at least 5 with symptoms lasting more than 4 weeks, occurred significantly more often in patients who had received preoperative radiation (67% vs 26%; P=.024).[74] However, no differences were noted in the rates of postoperative complications such as pouch fistula, sinus, stricture, or neoplasia. In addition, the rates of pouch failure are notably increased in pouch patients who have received pelvic radiation.[74,75]

Thus, pelvic radiation, before or after pouch surgery, may lead to acute or delayed pouch dysfunction. Therefore, patients with an existing ileal pouch, as well as patients who may undergo IPAA in the future, should be informed of the potential risks of radiation exposure to the pouch. Limiting radiation exposure and targeting narrower fields are advisable.

Crohn's Disease and Indeterminate Colitis

Many surgeons and gastroenterologists consider CD and even IC to be contraindications to IPAA due to fears of complications and pouch failure. For many young patients facing a lifetime with a permanent stoma, the prospect of maintaining bowel continuity, even if temporary, is highly desired. Understanding this demand, select patients with CD have undergone IPAA (CD-IPAA) at specialized pouch centers.[10]

Suboptimal results have been reported after IPAA in CD patients. Compared to UC and IC patients, CD patients undergoing IPAA were more likely to experience postoperative pelvic sepsis (odds ratio, 2.3) and anastomotic strictures (odds ratio, 2.1).[76] Functional outcomes may also differ. In multiple case series, CD-IPAA patients have more daily bowel movements and daytime bowel incontinence than UC patients after IPAA (UC-IPAA).[8,77] However, these outcomes are not consistent, as other researchers have reported fewer daily bowel movements in CD-IPAA.[78,79] Finally, in an older meta-analysis by Reese and colleagues, pouch failure rates were reported to be higher in CD-IPAA patients (34.9%) compared with UC-IPAA patients (4.8%) and IC patients who have undergone IPAA (5.0%).[76] However, more recent publications cite lower rates of pouch failure in CD-IPAA (Table 2).[18,77,78,80,81] The rates of pouch failure in CD-IPAA increase with fistulizing disease (pouch-vaginal fistulas, pouch-perineal fistulas, pouch-enteric fistulas)[77,80,82-85] and the need for immunomodulator or biologic therapy.[83]

More recent studies have noted better outcomes in CD-IPAA patients. Zaghiyan and colleagues reported long-term follow-up for 334 pouch patients over 10 years, finding no significant difference in the rate of pouch complications or failure when comparing UC, IC, and CD patients.[86] CD-IPAA patients have similar lengths of stay postoperatively compared to UC-IPAA patients.[18,79] Also, perhaps most importantly, CD-IPAA patients are happy with their pouches, scoring on par with UC-IPAA patients on quality-of-life surveys regarding dietary, social, work, or sexual restrictions.[18]

Selection of a specific phenotype of CD for surgery increases the likelihood of IPAA success. When selecting only CD patients with isolated colitis without perianal disease, there were no differences in the rates of postoperative complications, pelvic sepsis, or pouch failure compared with UC patients.[76] Panis and colleagues studied 31 CD patients with isolated colitis without perianal or small bowel disease.[79] After 5 years of follow-up, these isolated colitis CD- and UC-IPAA patients had similar outcomes with respect to stool frequency, incontinence, and pouch failure.[79] The authors concluded that select CD patients without anoperineal or small bowel manifestations can be

Table 2. CD and Pouch Retention

Study	Year	N	Timing of CD Diagnosis	Follow-Up (yrs)	Time to Diagnosis of CD (yrs)	Time From Diagnosis to Pouch Failure (yrs)	Pouch Retention (%)
Gu et al[77]	2014	65	De novo	7.9	3.6	2.5	57
Mylonakis et al[90]	2001	23	Overall Histology review De novo	10.2	NS	NS	52 67 36
Melton et al[80]	2010	97 87	Histology review De novo	9.6	NS	NS	74 53
Shen et al[93]	2010	11	Overall Preoperative[a] Histology review	5.0	NS	NS	92
Grucela et al[78]	2011	13	Preoperative (no perianal or ileal disease)	3.7	NS	NS	85
Fazio et al[18]	2013	150	NS	10.0	NS	NS	87
Brown et al[15]	2005	36	Overall Preoperative Histology review De novo	NS	NS	NS	44
Hyman et al[94]	1991	25	Histology review	3.2	NS	NS	68
Le et al[81]	2013	17	Preoperative (included small bowel disease and perianal disease)	5.0	NS	NS	94
Fazio et al[95]	1995	67	Histology review	2.3	NS	NS	75
Grobler et al[96]	1993	10	Overall Histology review De novo	4.0	NS	NS	70
Tekkis et al[97]	2005	26	Overall Preoperative (no perianal or small bowel disease) Histology review	4.7	NS	NS	43
Regimbeau et al[91]	2001	41	Preoperative (no perianal or small bowel disease)	9.4	NS	NS	90
Panis et al[79]	1996	31	Overall Preoperative (no perianal or small bowel disease) Histology review	5.0	NS	NS	90
Braveman et al[85]	2004	32	Overall Histology review De novo	12.8	1.6	5.5	72
Hartley et al[98]	2004	60	Overall Histology review De novo	3.8	NS	NS	88 92 67
de Oca et al[99]	2003	12	Histology review	6.3	NS	NS	84
Rudolph et al[100]	2002	14	Histology review	6.3	NS	NS	86
Truta et al[101]	2014	20	De novo	NS	NS	NS	85

[a]Included 4 patients with preoperative perianal fistulas.

CD, Crohn's disease; NS, not specified.

Table 3. Indeterminate Colitis and Pouch Retention

Study	Year	N	Follow-Up (yrs)	Pouch Retention (%)
Brown et al[15]	2005	21	NS	90.0
Fazio et al[95]	1995	75	1.5	98.1
Gramlich et al[102]	2003	115	3.4	96.6
Jackson et al[92]	2017	224	10.2	94.2
Pezim et al[103]	1989	25	3.2	92.0
Lightner et al[8]	2017	76	30.0	90.0
Rudolph et al[100]	2002	35	NS	100.0
Pishori et al[104]	2004	13	4.0	100.0
Fazio et al[18]	2013	63	7.0	95.2
Delaney et al[105]	2002	115	3.4	98.3
Tekkis et al[97]	2005	26	1.8	89.5
Yu et al[106]	2000	82	10.0	73.0
Marcello et al[107]	1997	53	NS	75.0

NS, not specified.

recommended for IPAA as an alternative to a more definitive end ileostomy.[79]

A distinction in pouch outcomes can also be made depending on the timing of CD diagnosis.[78] The diagnosis of UC or IC is changed to CD in 2% to 19% of IPAA patients.[77,78,80,86-89] CD can be diagnosed at numerous stages in the IPAA process: before colectomy, after histology review of the subtotal colectomy or completion proctectomy specimen, or delayed diagnosis (by months to years) post-IPAA (de novo CD of the pouch). It is difficult to predict which patients will develop de novo CD because many of the identified clinical factors such as younger age, female sex, mouth ulcerations, smoking, and family history are nonspecific.[89] Multiple retrospective studies have concluded that a known diagnosis of CD prior to pouch creation portends a lower risk of pouch failure compared with a delayed or unsuspected diagnosis of CD.[3,15,80,90,91] For example, Brown and colleagues noted that histologic diagnosis of CD at or before the time of pouch creation was associated with more pouch success than pouch failure (63% vs 15%; $P<.05$).[15]

Patients with IC who have pouch surgery fare better than patients with CD. Approximately 5% to 10% of patients with colitis have endoscopic, radiologic, and histologic findings from colectomy that are indeterminate, with mixed features of UC and CD.[80] Patients carrying the diagnosis of IC have pouch function on par with patients with UC, with no significant difference in the number of bowel movements, incontinence rates, or nighttime seepage.[92] However, patients with IC who undergo IPAA are more likely to develop CD of the pouch.[8,43,80,92] Nevertheless, pouch failure rates among IC, IBD-unclassified, and UC are similar in multiple cohorts (Table 3).[8,18,76,77,92]

In summary, the construction of IPAA in patients with CD can be successful in carefully selected patients. Indeed, the recently published European Crohn's and Colitis Organisation consensus on surgery in CD supports offering IPAA to CD patients without perianal disease or small bowel involvement.[3] However, overall pouch failure rates are higher in CD patients compared to patients with UC or IC.[8,18,78] A thorough preoperative evaluation in CD patients should include perineal examination combined with imaging of the abdomen and pelvis to rule out fistulas and small bowel disease. Potential surgical CD candidates should be counseled extensively regarding the possible need for examination under anesthesia, seton placement, use of biologic agents or immunosuppressants, and diversion. Taking all of this into account, only highly motivated patients with CD should be considered.

Conclusion

The incidence of pouch failure is decreasing,[11] partly due to improved surgical technique as well as increased use of biologic medications. However, strategic patient selection also increases the likelihood of satisfactory quality of life after pouch construction.

Careful preoperative counseling regarding realistic expectations after IPAA is essential because some degree of sphincter dysfunction with potential incontinence and increased bowel frequency can be expected postoperatively. Clinicians should take into account each patient's comorbidities, surgical history with any complications, and functional status.

Perhaps the most controversial indication for IPAA is CD. Although it is true that the diagnosis of CD is a potential contraindication to IPAA, patients with isolated Crohn's colitis may thrive after pouch surgery. At this time, patients with isolated Crohn's colitis (without perianal disease or small bowel involvement) have good pouch retention rates and are the optimal CD patients to consider for IPAA.[79,91] In the future, studies should focus on identifying specific clinical, genetic, or serologic markers that may predict which CD patients will thrive after IPAA.

The decision to undergo IPAA should be made after an extensive discussion among multidisciplinary team members and the patient. Effort should be made to honor the patient's wishes, taking into account his or her short-

and long-term life goals. Given the potential for complications, it is recommended that IPAA be performed in high-volume referral centers with specialized expertise in surgical and medical management of pouches.[53]

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