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Poster presentation

Variations reported in surgical practice for bleeding duodenal ulcers

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Abstract

Background: To determine the current surgical management of bleeding duodenal ulcers in our program, faculty (FAC) and residents (RES) were surveyed.

Methods: FAC (n = 33) and RES (n = 42) were surveyed regarding their surgery of choice between oversew (OS) or acid-reducing procedures (ARPs) in 4 scenarios. FAC who had recertified in general surgery (RECERT) were compared with young FAC who had not and RES (RES/young FAC). Two-group comparisons were performed.

Results: Seventy-three percent of FAC and 62% of RES responded. RES perform more ARPs on hemodynamic (HD), unstable, elderly patients than FAC ($P = .013$). On the elderly patient, RES/young FAC perform more ARPs in a HD stable ($P = .07$) and unstable condition ($P = .18$). HD unstable patients would undergo OS more frequently than stable patients ($P = .016$).

Conclusions: In this survey, the choice of optimal surgical procedure for an acute bleeding ulcer varies among surgeons based on years of surgical experience and individual patient factors.

Keywords: Duodenal ulcer; Peptic ulcer; Vagotomy; Survey; Practice patterns

Time and technology continue to afford a better understanding of the pathogenesis of duodenal ulcer disease as well as improved medications for the treatment of acid hypersecretion. However, the surgical literature lags in evidence-based support for minimal surgical procedures, such as simple oversew (OS) only, for the management of an acutely bleeding duodenal ulcer. New advances bring new questions as to the ideal treatment. Previous surgical dictum states that a vagotomy and pyloroplasty is the ideal choice for this difficult problem [1]. However, this surgery is plagued with significant postoperative complications such as dumping syndrome and diarrhea, can occur in up to 20% of patients [2–4]. New evidence regarding the role of *Helicobacter pylori* suggests that this aggressive surgical approach may no longer be needed. In fact, recent studies have shown that ulcerogenic effects of nonsteroidal anti-inflammatory drugs (NSAIDs) can cause a 2-fold increase in the risk of bleeding among patients infected with *H pylori* in comparison with patients who are *H pylori* negative, suggesting these conditions are additive [5]. *H pylori* has been found in 68% to 90% of bleeding duodenal ulcers [6–8]. In addition, successful eradication of *H pylori* has been shown to reduce recurrent ulcer bleeding rates [9,10]. The ulcerogenic role of *H pylori* is well understood and proton pump inhibitors are used widely, but their impact on surgical management of acutely bleeding duodenal ulcers still remains to be determined.

The aim of this study was to assess the variability and current opinion of attending surgeons and residents at our institution regarding OS versus acid-reducing surgery for 4 distinct clinical scenarios of a bleeding duodenal ulcer.

Materials and Methods

A survey consisting of 4 questions (2 different cases with 2 clinical scenarios) was sent to the faculty (FAC) and residents (RES) of the Division of General Surgery at the University of Utah after Institutional Review Board approval was obtained (Table 1). Surveys were sent to a total of 33 FAC and 42 RES of all levels. Two patient scenarios were presented in both a hemodynamic (HD) stable, and unstable, clinical condition. The respondents then were given 4 options to choose from, ranging from simple OS of the bleeding ulcer, OS of the bleeding ulcer with truncal vagotomy and pyloroplasty, OS of the ulcer and highly selective

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Table 1
Survey questions

Case 1. A 55 year old female is admitted for an upper G1 bleed. She is on daily NSAIDs for osteoarthritis. No other prior medical history. She requires operative intervention and stabilizes in the operating room.

Case 2. Same 55 year old female as above but she is hemodynamically unstable in the operating room and requires vasopressors to maintain her blood pressure.

Case 3. An 85 year old male is admitted for an upper GI bleed. He has a long standing history of peptic ulcer disease and is on daily proton pump inhibitor therapy. He has extensive medical co-morbidities to include hypertension, COPD, CHF and CAD. He requires operative intervention and stabilizes in the operating room.

Case 4. Same 85 year old male as above but he is hemodynamically unstable in the operating room and requires vasopressors to maintain his blood pressure.

Response Options:

A. Oversew of the bleeding ulcer

B. Oversew of the bleeding ulcer, truncal vagotomy and pyloroplasty

C. Oversew of the ulcer, highly selective vagotomy

D. Oversew of the ulcer, vagotomy and antrectomy with Billroth I/II or Roux-en-Y reconstruction.

E. Other, _____.

vagotomy, and antrectomy with either Billroth I/II or Roux-en-Y reconstruction. Respondents were given the option to enter a fifth response if they felt that none of the above were appropriate. Respondent demographics also were gathered, including age, sex, year of American Board of Surgery (ABS) certification, year of ABS recertification, completion of a fellowship, residency program, and number of ulcer surgeries performed per year. Comparisons were made between RES and FAC responses. To determine the effect of training more recently, we also compared surgeons who had recertified with the ABS (RECERT) with those who were younger and not yet eligible for recertification (RES/young FAC).

Comparisons between the study groups for dichotomous outcomes were performed using the chi-square test if the minimum expected cell frequency assumption was met (80% of the cells have expected frequencies of at least 5 and no cell has an expected frequency of <1). Otherwise, the Fisher exact test was used. Two-group comparisons for ordered categoric variables was performed using the Wilcoxon-Mann-Whitney test. A P value of less than .05 was considered significant. All descriptive statistical analyses were performed with STATA 9.0 (Stata Corp, College Station, TX).

Results

Demographics

There were 24 FAC (73%) and 26 RES (62%) who completed the survey. The RES and FAC demographic information is listed in Table 2.

Table 2
Respondent demographics

Variable	Rate
Number of residents (PGY1-5)	26/42
Response rate	62%
Average age of residents	30.96 ± 2.95 y
PGY of resident respondents:	
PGY 5/4	8
PGY 3/2/1	18
Number of attendings	24/33
Response rate	73%
Average age of attendings	46.91 ± 9.32 y
ABS recertification	54% (13/24)
Completed a surgical fellowship	42% (10/24)
Years since first ABS certification	12.91 ± 9.18 y
Average number of surgical procedures for bleeding duodenal ulcers per year	2.4 (range, 0–10)

Values are given with the SD from the mean.
PGY = postgraduate year.

RES versus FAC

RES differed significantly from FAC in the management of the 85-year-old man in a HD unstable condition with RES performing more acid-reducing procedures (ARPs) (P = .013) (Fig. 1). Several RES chose to perform an antrectomy with either Billroth or Roux-en-Y reconstruction whereas all FAC chose either a simple OS of the ulcer or OS with vagotomy and pyloroplasty. RES also differed from FAC on patient 1, with RES tending to perform more OS surgeries with a young patient on NSAIDs (P = .0751) (Fig. 1).

Patient HD stability

In the 2 cases of HD stability, all surgeons (RES and FAC) performed ARPs a majority of the time, 58% and 74% for patients 1 and 2, respectively. However, with intraoperative HD instability, regardless of the clinical situation, RES and FAC performed OS of the bleeding ulcer the majority of the time, 82% and 72% for patients 3 and 4, respectively. Overall, HD unstable patients would undergo OS more frequently than HD stable patients (P = .016). ARPs were performed less frequently in the younger patient taking NSAIDs versus an elderly man with multiple comorbidities, although the difference was not statistically significant (P = .263).

RECERT versus RES/young FAC

RECERT tended to perform a more aggressive surgery on the 55-year-old patient by performing more ARPs than

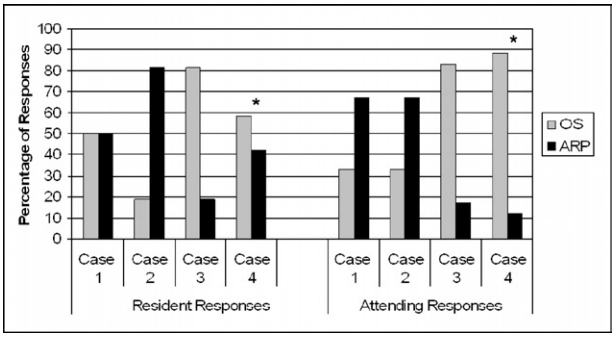

Fig. 1. Responses for RES and FAC for management of an acute bleeding duodenal ulcer. *Significant difference between FAC and RES in management of patient 4, P = .013.