Nodal Surgery for Patients ≥70 Undergoing Mastectomy for DCIS? Choose Wisely

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BACKGROUND: Routine sentinel lymphadenectomy (SLNB) for early-stage HR+/HER2- breast cancer in women ≥70 is discouraged by Choosing Wisely, but whether SLNB can be routinely omitted in women ≥70 with DCIS undergoing mastectomy is unclear. This study aims to evaluate those upgrading from DCIS to invasive cancer (≥pT1) or have positive lymph nodes (pN+) and determine the impact of axillary surgery on treatment decisions.

METHODS: Females ≥70 with DCIS undergoing mastectomy were identified from the National Cancer Database (2012-2020). The rate of upstaging to ≥pT1 or pN+ among those undergoing axillary surgery was assessed. Subset analyses were conducted for ER+ DCIS patients. Adjuvant therapies were evaluated among ≥pT1 patients after stratifying by nodal status.

RESULTS: Of 9,030 patients, 1,896 (21%) upstaged to ≥pT1. Axillary surgery was performed in 86% of patients, predominantly SLNB (65%). Post hoc application of Choosing Wisely criteria indicated that 93% of the entire cohort and 97% of ER+ DCIS patients could have avoided axillary surgery. Nodal positivity was 3% among those who didn't upstage, and 12% among those upstaging to ≥pT1, with <2% having pN2-3 disease, irrespective of receptor subtype (Table). Node-positive patients had higher adjuvant therapy usage, yet there was no recommendation for adjuvant chemotherapy or radiation for 71% and 66% of patients, respectively.
CONCLUSIONS: Axillary surgery is likely unnecessary for most ≥70-year-old ER+ DCIS patients undergoing mastectomy, aligning with recommendations for invasive cancer, without substantial impacts on adjuvant therapy recommendations. Future guidelines incorporating preoperative imaging, as in the SOUND trial, may aid in identifying patients benefiting from axillary surgery.

Nodal status of women ≥70 with DCIS undergoing mastectomy and axillary surgery stratified by ER status and upgrade to invasive cancer. [Note: All values are n (%); ER: estrogen receptor]

	ER+		ER-	
	pTis	≥pT1	pTis	≥pT1
n	4287	1277	1464	461
Pathologic Nodal Stage				
pNX	29 (0.7)	8 (0.6)	10 (0.7)	2 (0.4)
pN0	4225 (99.0)	1112 (87.2)	1441 (98.9)	396 (85.9)
pN1	12 (0.3)	139 (10.9)	5 (0.3)	50 (10.9)
pN2	0 (0.0)	12 (0.9)	1 (0.1)	10 (2.2)
pN3	1 (0.0)	5 (0.4)	0 (0.0)	3 (0.7)

Philadelphia

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TITLE: Dr. Google to Dr. ChatGPT: Assessing the Content and Quality of Artificial Intelligence-Generated Medical Information on Appendicitis

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Background: The advent of generative AI chatbots offers new possibilities for providing online medical information and improving health literacy. However, the quality and readability of existing patient-oriented medical information are often variable. This study assesses the content and quality of AI-generated medical information on acute appendicitis, the most common surgical abdominal surgical emergency in the world.

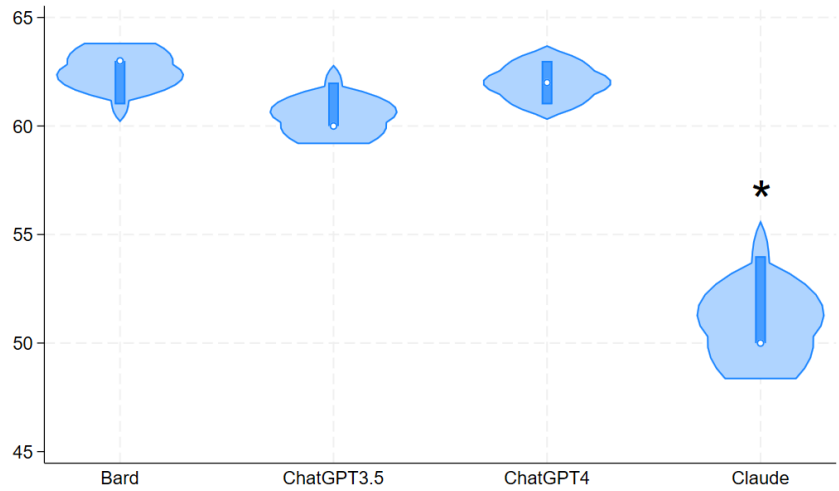
Methods: We employed a modified DISCERN tool with 16 criteria rated on a 5-point Likert scale (range 16-80) to evaluate the quality of AI-generated content. Readability was assessed using the Flesch Reading Ease (FRE) and Flesch-Kincaid Grade Level (FKGL) scores. Four AI chatbots – ChatGPT-3.5, ChatGPT-4, Bard, and Claude-2 – were prompted to provide information on appendicitis. Three independent investigators, blinded to the AI source, scored the texts.

Results: ChatGPT-3.5, ChatGPT-4, Bard, and Claude-2 had overall mean (SD) quality scores of 60.7 (1.2), 62.0 (1.0), 62.3 (1.2), and 51.3 (2.3), respectively, on a scale of 16-80. Inter-rater reliability indicated substantial agreement (0.72-0.81). Claude-2 had significantly lower scores than the other platforms (Figure 1, P<0.05). Bard was unique in citing verifiable sources, while Claude-2 often presented fabricated sources. Except for Claude-2, all advised consulting a physician for symptoms. Readability scores suggested college-level difficulty (FKGL: 14.6 to 8.6, FRE: 23.8 to 52.8).

Conclusion: AI-generated medical information on appendicitis generally scored well in quality, but varied in source credibility and readability, which was higher than recommended for a general audience. These platforms show potential in patient education about appendicitis, but improvements are needed in source accuracy and readability.

249 words.

Figure 1. Violin plot of quality scores (range 16-80) by artificial intelligence platform. * indicates significance (p<0.05).



New York

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Title: Association between Socioeconomic Markers, Hospital Characteristics, and In-Hospital Mortality Among Adults Diagnosed with Necrotizing Soft Tissue Infection

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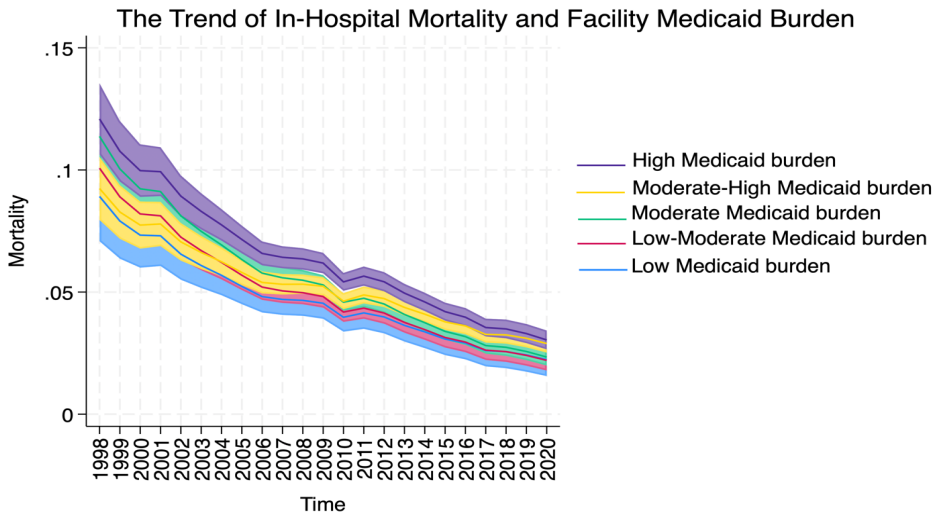
Introduction: Necrotizing soft tissue infections (NSTIs) are life-threatening infections. Black, Hispanic, and Medicaid patients have higher amputation rates, prolonged hospitalization, and worse survival. We investigated associations between socioeconomic factors in the context of facility-level resource availability, as defined by Medicaid payer proportions, on NSTI-related in-hospital mortality.
Methods: The Nationwide Inpatient Sample was used to identify adult patients with necrotizing fasciitis, gas gangrene and Fournier's gangrene from 1998 to 2020. Primary outcome was in-hospital mortality. Risk-adjusted logistic regression models examined race, median income quartile, insurance payer type, and facility Medicaid burden (annual proportion of discharges of patients whose primary insurance payer was Medicaid) associations with in-patient mortality.
Results: NSTI was diagnosed in 69,751 adults from 1998 to 2020. In-hospital mortality was observed in 3,520 (5.1%) patients. Risk-adjusted independent mortality odds were lower among Black patients compared to White patients (adjusted Odds Ratio [aOR] = 0.84; p =0.002) and those with private insurance (aOR = 0.73, p<0.001). Mortality risk was higher among Asians (aOR= 1.74; p<0.001) and facilities with the highest Medicaid payer proportions (aOR = 1.41, p<0.001). Although overall mortality risk decreased over the study period, there is no significant change in this risk for high Medicaid burden hospitals relative to the low Medicaid burden hospitals (interaction p=0.14).
Conclusions: Patients diagnosed with NSTI after admission to high Medicaid burden hospitals were significantly associated with higher odds of mortality. Equitable allocation of resources to hospitals should focus on vulnerable populations who usually receive care in higher Medicaid burden hospitals. 450 Clarkson Avenute, Brooklyn, NY, 11203

Figure 1.



Bridging the Gap: Assessing the Transferability of Virtual Reality Skills to the Operating Room in Surgical Training

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Introduction:
Robotic simulation modules are increasingly used in surgical training, but skill transferability to the operating room (OR) remains unclear. This study investigates the relationship between robotic simulation proficiency and OR performance among surgical fellows.

Methods:
First-year minimally-invasive and cardiothoracic surgery fellows completed Intuitive's® Combo Exercise. They had two attempts to achieve mastery, defined as an aggregate score ≥90%. Subsequently, they performed a robotic hiatal hernia (HH) repair with fundoplication on a Kindheart model. Master surgeons evaluated OR performance using a 5-tier Likert scale rubric, encompassing operation-specific procedures, general criteria, and overall score. Correlation between economy of motion (EOM) and median overall OR scores was analyzed.

Results:
Only 37.5% of fellows achieved mastery within two attempts. Fellows assisted in approximately two (IQR: 0, 8) robotic HH during residency. Median EOM for those achieving mastery (645.1) vs. those who did not (722.3) showed no significant difference ($p=0.11$). Negative correlations occurred between median EOM and overall OR score ($r=-0.211$) and between number of robotic HH completed in residency and median EOM ($r=-0.456$). A positive correlation existed between number of robotic HH completed and overall score ($r=0.934$).

Conclusion:
The lower-than-expected mastery of robotic skills in the simulation setting for incoming fellows underscores the need to expand this training approach. Fundamental skills obtained through virtual simulation may enhance surgical trainees' efficiency and autonomy in the OR for robotic surgeries. Given the strong predictive value of prior robotic OR experience for robotic OR performance, virtual simulation training may be most critical early in skill acquisition.

Boston

Advancing Intestinal Anastomoses: From Open to Minimally Invasive Magnetic Compression Techniques

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Background: Successful anastomotic healing is critical to preventing complications after intestinal surgery. We aimed to evaluate safety, efficacy and compare healing of end-to-end small bowel anastomosis by self-forming magnets (SFM) compared to traditional approaches using a porcine model.

Methods: Twenty Yorkshire pigs underwent surgery in two separate experiments. First one evaluating healing characteristics of small bowel magnetic anastomosis compared to stapled anastomosis. The second porcine model evaluated SFM anastomoses compare to stapled and handsewn anastomoses. The primary outcome was healing quality, measured by 4 histologic features: inflammatory cell infiltration, collagen formation, grade of inflammation, and bacterial infiltration at the anastomosis. The samples were evaluated at days 1, 3, and 7. Secondary outcomes included anastomosis creation time, adhesions score and burst testing at week 6.

Results: In regard to healing, the SFM group displayed significant differences at each time point. On day 1, the stapled group displayed dense inflammatory cell infiltration and extensively ulcerated intestinal layers with significant edema. The SFM group showed less inflammatory infiltrate, and all intestinal layers remained compressed in direct apposition. By day 3, the SFM group already exhibited neovascularization with scant bacterial colonies. By contrast, stapled anastomoses had large areas of inflammation separating collagen fibers with prevalent bacterial infiltrations. On day 7, SFM anastomoses were characterized by robust neovascularization, maturing granulation tissue, and mucosal re-epithelization without significant inflammation. Meanwhile, stapled samples had persisting dense inflammation, tissue cavities with hemorrhage, and immature fibrous tissue. Mean creation times were 17.1 min (SD 6.06) for the SFM group, 10.3 min (SD 6.55, CI 95%) for the stapled anastomosis group, and 28.3 min (SD 2.63, CI 95%) for the suture anastomosis group, with a statistically significant difference among groups. All six magnets used for anastomoses were naturally expelled

Conclusion: Anastomosis by SFM is a safe procedure, SFM anastomoses were associated with superior early histologic healing metrics, including early seal generation through mechanical compression, decreased inflammation, early neovascularization, lower bacterial infiltration, and faster re-epithelization.

Boston

Fragmented Care in Pancreatic Cancer Treatment: Bridging Gaps for Improved Patient Related Outcomes

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Introduction:

The centralization of pancreatic adenocarcinoma (PDAC) care may predispose PDAC patients to experience fragmented care (FC), or care at multiple centers. For patients transferring to academic centers FC may offer benefits, but the impact of FC on operative outcomes in pancreatic adenocarcinoma remains mixed in the literature.

Methods:

Patients with operable PDAC diagnosed from 2008 to 2022 met inclusion criteria. Treatment facilities were collected at four distinct time points: diagnosis, delivery of neoadjuvant chemotherapy and/or chemoradiation, and definitive surgery. Patients were subdivided by therapy type and receipt of FC versus no FC, where FC was defined by treatment at multiple facilities.

Results:

273 patients were included, with 146 (53.5%) patients receiving FC, compared to 127 (46.5%) who did not (Table 1). Most patients received surgery first (56.4%), versus neoadjuvant therapy (43.6%)(p=0.93). In the surgery first group race was significantly associated with FC (p=0.03). FC patients who received neoadjuvant therapy were more likely to experience positive operative margins compared to no FC (15.7% vs 8.7% p=0.05). Among surgery first FC patients who transferred to a community cancer center for definitive resection, there was also a higher rate of positive operative margins than those with no FC (28.1% vs 9.7% p=0.08).

Conclusions:

FC was associated with positive operative margins among patients who received neoadjuvant therapy, and who transferred to community centers for surgery. Additional investigation into the impact of facility type in fragmented care is needed, as centralization of pancreatic surgery to academic centers may significantly impact operative outcomes in PDAC.

Table 1: Demographics by degree of fragmentation

	No Fragmented Care (n=127)	Fragmented Care (n=146)	p-value
Surgery First	**n=72**	**n=82**	
Age at diagnosis (median)	68.0	65.0	p=0.21
Gender			p=0.07
Female	27	43	
Male	45	39	
Race			p=0.03
Caucasian	67	64	
Black	4	13	
Other	1	5	
Insurance Status			p=0.67
Private	27	35	
Public	44	45	
Uninsured	1	2	
Tumor size at diagnosis (median)	3.0 cm	3.4 cm	p=0.39
Neoadjuvant Therapy	**n=55**	**n=64**	
Age at diagnosis (median)	67.0	64.5	p=0.21
Gender			p=0.18
Female	29	26	
Male	28	38	
Race			p=0.07
Caucasian	48	50	
Black	5	5	
Other	2	9	
Insurance Status			p=0.26
Private	23	25	
Public	32	36	
Uninsured	0	3	
Tumor size at diagnosis (median)	3.5 cm	3.5 cm	p=0.64