Case Series: Hinchey IV Sigmoid Diverticulitis Followed by Major Orthopedic Surgery

Kim, M. MD[1], Gebran, S. MD[1], Martin, S. MD[2], Adegboyega, T. MD[2], Shih, S. MD[2], Birisan, C. MD[2], Rivadeneira, D. MD[2]
Wyckoff Heights Medical Center[1], Huntington Hospital[2]

Background

Perioperative opioid use for pain control is widely accepted, particularly for major operations, despite its notorious side effect of constipation that can occasionally lead to bowel perforation. This report discusses four cases of perforated sigmoid diverticulitis in patients with a history of opioid analgesic use following recent major orthopedic surgery.

Patient Characteristics

The cohort consists of three male and one female patient, aged 55 to 77 years old (median: 73 years).
Three of the four patients had a history of diverticulitis, with two presenting to the emergency department or being admitted for acute diverticulitis a few days prior to perforation.
Two patients had previously been diagnosed with diverticulosis via colonoscopy.
Significant medical histories include coronary artery disease with stent placement in two patients and anticardiolipin antibody syndrome in one patient.

Orthopedic surgical history

The types of orthopedic surgeries performed included cervical laminectomy, right total shoulder replacement, left total hip replacement, and bilateral total knee replacement.
All patients were prescribed opioids for postoperative pain control, including hydromorphone (2 mg), and oxycodone (5 mg and 10 mg).

Hospital Course

All four patients were found to have Hinchey IV sigmoid diverticulitis and subsequently underwent open sigmoidectomy with end colostomy creation (Open Hartmann's procedure).
The interval from the original surgery to the emergency department visit ranged from 3 to 14 days, and the time to the Hartmann's procedure ranged from 3 to 19 days.
All patients required admission to the intensive care unit for postoperative care, with lengths of stay ranging from 3 to 102 days (median: 10.5 days). The total length of stay ranged from 8 to 106 days (median : 13 days).
Complications following the Hartmann's procedure included postoperative delirium in one patient and multiorgan failure due to septic shock, acute kidney injury leading to long-term hemodialysis, ARDS requiring tracheostomy, NSTEMI, and atrial fibrillation.

Conclusion

Given the potentially life-threatening outcomes associated with opioid use, special attention should be given to patients receiving opioid analgesics. Multimodal pain control with non-opioid medications and adequate stool softeners should be considered to minimize side effects when opioids are deemed necessary.

	Age/ Sex	Comorbidities	Prior history of Diverticulitis	Types of Orthopedic Surgery (OS)	Types of Prescribed Opioid/ Frequency and Duration	Diagnosis/ Operative intervention	Length of OS to Hartmann's	Length of ICU stay	Total Length of stay	Postoperative Complications
A	75/M	HTN, HLD, CAD s/p stents, EtOH abuse, smoker	Y	Cervical spine laminectomy	Hydromorphone PO (2-4mg Q4-6h for 2days, PRN)	Hinchey IV sigmoid diverticulitis/ Open sigmoidectomy with end colostomy creation (open Hartmann's procedure)	6 days	15 days	23 days	Postoperative delirium
B	77/M	CAD s/p stents	Y	Right total shoulder replacement	Oxycodone PO (5mg Q6h for 5days, PRN)		3 days	6 days	10 days	None
C	55/F	HTN, GERD, anti-cardiolipin antibody, asthma	Y	Left total hip replacement	Hydromorphone PO (2mg Q4-6h for 4days, PRN)		19 days	3 days	8 days	None
D	71/M	HTN, HLD, OA	N	Bilateral total knee replacement	Oxycodone PO (5mg Q3h, 10mg Q3h, PRN)		4 days	102 days	106 days	MODS, AKI leading to long-term hemodialysis, ARDS requiring tracheostomy, NSTEMI, A.fib