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Optimizing patient outcomes: Nursing care in giant Morgagni and umbilical hernia surgical repair: A nursing case study

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Abstract
Giant Morgagni hernias are rare congenital diaphragmatic defects in adults, often discovered incidentally or during evaluation for non-specific symptoms. This case study presents a 75-year-old male with a giant Morgagni hernia and concurrent umbilical hernia, managed successfully through robotic-assisted surgical repair. The patient's complex medical history, including hypertension, diabetes, hypothyroidism, and past orthopedic surgeries, posed perioperative challenges. A multidisciplinary team approach was adopted for preoperative optimization. Nursing care was central to patient recovery, encompassing respiratory support, pain management, medication administration, early ambulation, wound care, and comprehensive discharge planning. This case highlights the vital role of evidence-based nursing interventions in enhancing surgical outcomes, particularly in elderly patients with comorbidities. Robotic surgery offered advantages of minimal invasiveness, reduced postoperative complications, and faster recovery. Integrating advanced technology with structured nursing care can significantly improve patient-centered outcomes in complex surgical scenarios.

Keywords: Morgagni hernia, robotic-assisted surgery, umbilical hernia, perioperative nursing care, geriatric patient, postoperative recovery, multidisciplinary approach

Introduction

Clinical Pathway & Progression

Patient Presentation and Admission

Mr. L, age 75, presented with exertional dyspnea and umbilical swelling. He reported no pain, fever, or gastrointestinal symptoms. Medical history included hypertension, diabetes, hypothyroidism, bilateral total knee replacements, TURP, and a history of hernia repair. On examination, vitals were stable: BP 130/80 mmHg; HR 80 bpm; RR 20/min; Temperature 98°F. Abdominal exam revealed a reducible umbilical mass without tenderness. No neurological deficits were noted.

Diagnosis and Preoperative Preparation

A CT scan revealed an 11 × 6 cm Morgagni hernia in the middle of the diaphragm and minimal omental adhesions within the sac associated umbilical hernia. Pulmonary function tests indicated severe obstructive lung disease. Given the patient's comorbidities, a multidisciplinary team-pulmonology, anaesthesia, internal medicine, and hepatology-provided preoperative optimization. Nurses coordinated these clearances, ensured completion of diagnostic tests, and conducted preoperative education using the teach-back method.

Surgery and Immediate Postoperative Care

On **Postoperative** period, the patient underwent robotic Morgagni hernia repair with umbilical hernia correction. The hernial sac was reduced, the defect repaired using mesh reinforcement, and the procedure was completed without complications. Postoperatively, he was admitted to the ICU, where nurses monitored respiratory status, administered prophylactic antibiotics (Supacef), DVT prophylaxis (Clexane), gastric protection (Pantaprazole), analgesics (Perfalgan), and antiemetics (Emeset).

Immediate Postoperative Phase (ICU Monitoring – POD 0)

Postoperatively, the patient was transferred to the Intensive Care Unit (ICU) for close monitoring and stabilization. The nursing team implemented critical postoperative care protocols to ensure patient safety and comfort. Airway patency and adequate oxygenation were maintained using oxygen therapy via nasal prongs, with continuous monitoring of oxygen saturation (SpO_2). Vital signs were monitored closely and continuously to detect any early signs of complications. Pain was regularly assessed using standardized pain scales, and managed effectively with intravenous analgesia, specifically Inj. Perfalgan. To reduce the risk of deep vein thrombosis (DVT), Inj. Clexane 40 mg subcutaneously was administered as prophylaxis. Infection prevention was supported by Inj. Supacef 1 g IV thrice daily as part of antibiotic prophylaxis. Gastrointestinal protection was ensured using Inj. Pan 40 mg IV once daily, particularly due to stress and concurrent analgesic use. In addition, Inj. Emeset 4 mg IV thrice daily was administered to prevent postoperative nausea and vomiting, thus supporting early initiation of oral intake and patient comfort.

The patient was kept NPO for 6–8 hours' post-op and started on sips of water once fully awake and without nausea. Head-end elevation was maintained at 30° to prevent aspiration and aid lung expansion.

Postoperative Progression: Ward Recovery (POD 1–3)

POD1

The patient was stable and shifted to the ward. He was started on oral fluids, which he tolerated well. Nebulization with Duolin and Budecort was initiated to improve pulmonary function. Incentive spirometry was encouraged every 2 hours to prevent atelectasis.

Nursing interventions focused on

- **Respiratory care:** Teaching MDI usage with Foracort via spacer
- **Early ambulation:** With walker and supervision, considering past TKR
- **Binder support:** Applied to reduce strain on the abdominal wall
- **Wound care:** Daily dressing changes with sterile precautions

POD2

Oral diet advanced to soft food. Pain well managed with Hifenac-P (SOS). IV antibiotics were stopped, and oral Refzil-O (Cefprozil 500 mg BID) was initiated. Vitals remained stable. Patient mobilized with less assistance.

POD3 (Discharge Day)

The patient was discharged in stable condition with detailed home care instructions. All discharge medications, including the patient's regular medications, were prescribed after thorough drug reconciliation.

The patient was discharged in a stable condition with detailed home care instructions and a comprehensive medication plan. As part of his long-term management, Tab. Ecosprin AV was prescribed for cardioprotection, helping reduce the risk of thrombotic events. To maintain optimal blood pressure control, a combination of Tab. Telma CT and Tab. Cilacar was continued. For his pre-existing hypothyroidism, Tab. Thyronorm was advised to be taken in the morning on an empty stomach to ensure proper absorption. To protect the gastric lining, especially with concurrent NSAID use, Tab. Veloz, a proton pump inhibitor, was included in the regimen. Cap. Becosule, a multivitamin supplement, was prescribed to support wound healing and general nutritional needs, particularly in the geriatric population. For pain management, Tab. Hifenac-P was given on a "when-needed" (SOS) basis, with clear instructions on the maximum allowable daily dose. As the patient had a history of dyspnea and showed obstructive patterns on pulmonary function tests, Foracort MDI (to be used via a spacer) and home nebulization therapy were continued to maintain airway patency and support respiratory recovery.

Discharge Planning and Education

Nursing staff played a central role in ensuring a safe and informed discharge.

- **Medication education:** Use of a pillbox and chart
- **Binder use:** When and how to wear, and precautions
- **Wound care:** Aseptic technique and signs of infection
- **Activity restriction:** Avoid bending, lifting, and straining
- **Follow-up appointments:** Provided in writing and explained
- **Red flag symptoms:** Fever, increased pain, breathlessness, wound discharge

The family was involved throughout discharge counseling and demonstrated correct technique for spirometry, dressing, and medication timing.

Discussion

This case illustrates how robotic surgery can benefit elderly patients with complex hernias and multiple comorbidities. However, surgical success must be supported by holistic, evidence-based nursing care. In Mr. L case, careful monitoring of respiratory status, pain, wound healing, and medication tolerance ensured a smooth postoperative recovery. Education and psychological support were equally vital, especially in geriatric patients who may face anxiety and confusion in hospital settings.

Conclusion

Robotic-assisted Morgagni hernia repair with umbilical hernia correction is a safe, efficient, and minimally invasive approach for elderly patients. Nursing care remains the backbone of surgical recovery, ensuring early detection of complications, adherence to treatment, patient empowerment, and long-term wellness.

Conflict of Interest

Not available.

Financial Support

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