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Review Article

The Management of Complicated Inguinal Hernia: An Update: Narrative Review Article

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Abstract: The management of complicated inguinal hernias in adults remains a significant surgical challenge and is associated with increased morbidity and mortality when diagnosis or treatment is delayed. Complicated inguinal hernias include both incarcerated and strangulated inguinal hernias. Prompt clinical evaluation supported by appropriate imaging is essential for early diagnosis and risk stratification. Emergency surgical intervention remains the cornerstone of treatment, with the timing of repair playing a crucial role in patient outcomes. Various open and minimally invasive approaches have been described, with the choice of technique depending on patient factors, surgeon expertise, hernia characteristics, and the presence of contamination or bowel resection. The use of prosthetic mesh in emergency settings continues to be debated; however, emerging evidence suggests that mesh repair can be safely performed in selected patients without gross contamination, reducing recurrence rates. A multidisciplinary approach, combined with timely diagnosis and appropriate operative intervention, is essential to optimize outcomes. Further high-quality studies are needed to establish standardized protocols and clarify the role of minimally invasive techniques and mesh implantation in contaminated surgical fields. This review examines the current evidence regarding the operative management of complicated inguinal hernia and the role open and laparoscopic repairs play in its management. We will also examine the role mesh plays in complicated inguinal hernia in adults.

Keywords: "Emergency Hernia"," Strangulated Hernia", Complicated Hernia"," Incarcerated Hernia"," TAPP", TEP"," Mesh", and "Sutured Repair".

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INTRODUCTION

Complicated inguinal hernias are used to describe inguinal hernias that have become incarcerated or strangulated. Incarceration is defined as inguinal hernias that cannot be reduced and remain in the anterior abdominal wall. This is the initial phase for patients who are present with a complicated inguinal hernia. Strangulation is defined as the compromise of the blood supply to the contents of the hernia sac, which may include intestine or omentum. Complicated inguinal hernia accounts for 5% to 10% of all inguinal hernia repairs, and risk factors include hernia type, hernia duration, age, gender, and obesity (Kulacoglu, 2023). Complicated inguinal hernia is diagnosed clinically, and blood tests such as a complete blood count are used to detect leukocytosis and elevated inflammatory markers like C-reactive protein. Imaging modalities like ultrasound and computerized tomography are also used to aid in the diagnosis of complicated inguinal hernia. The surgical management of complicated inguinal hernia can be divided into the open approach, which can be performed via an inguinal or midline laparotomy depending on the level of contamination. The hernia repair can be performed with a mesh-based or suture-based repair depending on the level of contamination. The laparoscopic inguinal hernia repair, such as transabdominal preperitoneal (TAPP) or total extraperitoneal (TEP), can also be performed for complicated inguinal hernia (Tiernan *et al*., 2010; Towfigh, 2019).

The HerniaSurge guidelines for the management of complicated inguinal hernia in adults

have recommended a prompt diagnosis of complicated inguinal hernia by clinical examination of the groin to establish the diagnosis of strangulation. Surgical treatment should be performed promptly, and there should be a tailored approach as to whether an open or laparoscopic method should be performed and if mesh should be used. Monofilament large pore mesh is recommended for clean or clean-contaminated complicated inguinal hernia repair. Prophylactic antibiotics are indicated for complicated inguinal hernia, with continuation as therapeutic antibiotics if there is extensive contamination of the wound(Tran, 2018). The World Society of Emergency Surgeons (WSES), in its guidelines for the emergency repair of complicated abdominal wall hernias, has recommended emergency inguinal hernia surgery if strangulation is suspected. A laparoscopic approach can be performed if there is an absence of strangulation and bowel resection is not performed. Mesh can be used for complicated inguinal hernia repair in incarcerated and strangulated hernias with minimal contamination(De Simone *et al*., 2020).

There is currently no consensus on the management of complicated inguinal hernia in adults. In this review, we will look at the role of open and laparoscopic inguinal hernia repairs, looking at their advantages and disadvantages. We will also examine the role of mesh-based repairs in managing complicated hernia. We conducted a literature review in PubMed, Google Scholar, Semantic Scholar, and Cochrane databases to identify original articles, observational studies, clinical trials, clinical reviews, review articles, and meta-analyses from 1990 to 2026. The following keywords were used: “Emergency hernia”,” Complicated hernia”, “strangulated hernia”, “Incarcerated hernia”, “TAPP “TEP”, and sutured repair”. All articles were in English only, and further articles were obtained by manual cross checking. Case reports, commentaries, and editorials were excluded. All articles with adult patients, including elderly patients, were included in this review.

DISCUSSION

The Open Mesh-Based Repairs for Complicated Inguinal Hernia

A prospective study on the feasibility of mesh repair for strangulated inguinal hernia was conducted by Abu Ellatif *et al*. There were 163 patients in this study, with 48 patients undergoing bowel resection, and 115 did not require bowel resection. All the patients then underwent the Lichtenstein hernia repair. There were no differences regarding postoperative complications, wound infection, and recurrence rates between the procedures(Abd Ellatif *et al*., 2012). Bessa *et al*., looked at the early results of the Lichtenstein repair for strangulated inguinal hernia in adults. There were 50 patients in this study, with 25 patients with strangulated hernia being compared with 25 patients with uncomplicated inguinal hernia. There were no differences regarding postoperative complications and infection rates between the procedures(Bessa *et al*., 2007). The long-term effects of prosthetic mesh repair in the emergency management of incarcerated and strangulated inguinal hernia were studied by Bessa *et al*., There were 234 patients in this study, and 32 patients underwent bowel resection. Postoperative complications were encountered in 17.5% of the cases, and the wound infection rate was 6%. The recurrence rate was 0.9% after a follow-up of 35 months(Bessa *et al*., 2015).

Ozbagriacik *et al*., looked at the management of strangulated abdominal wall hernia with mesh. 40 patients underwent mesh repair for strangulated inguinal hernia. The postoperative infection rate was 6.2%, and there were no differences regarding length of hospital stay(Ozbagriacik, 2015). Pandey *et al*., conducted a prospective observational study on the use of mesh for contaminated and strangulated inguinal hernia. There were 21 patients with strangulated inguinal hernias, and the wound infection rate was 26.6%, but mesh removal was not required in all of the cases, and there was one recurrence(Pandey *et al*., 2018). A prospective clinical study on the use of mesh repair for incarcerated and strangulated inguinal hernia was conducted by Topcu *et al*., There were 153 patients in this study, with 53 undergoing bowel resection and 100 who did not undergo bowel resection. The Lichtenstein repair was performed for all the patients, and the overall infection rate was 3.3%, and there were no mesh removals or recurrence noted (Topcu *et al*., 2013). Wysocki *et al*., looked at the safety of the Lichtenstein repair for strangulated inguinal hernia in adults. There were 56 patients in this study, and superficial wound infection was seen in 2 patients and hematoma formation was seen in 2 patients. There was no mortality or recurrence between the procedures(Wysocki *et al*., 2006).

Comparison of the Open Mesh -Based and Suture-Based Repairs for Complicated Inguinal Hernia

Karatepe *et al*., conducted a randomized controlled trial comparing the open preperitoneal and Lichtenstein repair for incarcerated inguinal hernia in adults. 40 patients were included in this study, with 21 undergoing the Lichtenstein repair and 19 undergoing the preperitoneal repair. There were no differences in the duration of surgery and complications between the procedures, but 10.5% of the patients who underwent the Lichtenstein repair required an additional incision(Karatepe *et al*., 2008). Kancharia *et al*., conducted a randomized comparative study comparing the Desarda repair versus mesh hernioplasty for strangulated inguinal hernia. The study included 121 patients: 60 underwent mesh repair, and 61 underwent Desarda repair. The wound infection rate was higher in the mesh repair group (35.4% vs9.6%), the seroma formation was also higher in the mesh repair group (35.4%vs19.3%). The mesh repair group was also associated with a higher recurrence rate (22.5% vs 3.2%) (Kancharla *et al*., 2022).

Papaziogas *et al*., conducted a comparative study of tension-free repair versus modified Bassini repair for strangulated inguinal hernia. There were 75 patients in this study, with 33 patients undergoing the tension-free repair and 42 undergoing the modified Bassini repair. No differences were reported in postoperative complications, but tension-free mesh repair was associated with shorter hospital stay and operative time (Papaziogas *et al*., 2005). Tomaoglu *et al*., conducted a retrospective study comparing prosthetic mesh repair versus primary repair for incarcerated and strangulated inguinal hernias. The study included 141 patients with inguinal hernias: 114 underwent mesh repair, and 27 underwent primary repair. There were no significant differences regarding postoperative complications between the procedures(Tomaoglu & Okmen, 2021). Elsebae *et al*., conducted a randomized controlled study comparing tension-free repair versus Bassini repair for strangulated inguinal hernia. There were 54 patients in this study, with 27 undergoing tension-free repair and 27 undergoing the Bassini repair. There were no significant differences regarding postoperative complications between the procedures, but the recurrence rate was higher in the Bassini group (11% vs 0%)(Elsebae *et al*., 2008).

A systematic review and meta-analysis on the safety and effectiveness of mesh repair for incarcerated and strangulated inguinal hernia was conducted by Lin *et al*., There were 8 studies with 978 patients in this review, and there were no differences regarding surgical site infection between the mesh and suture-based repairs. The recurrence rate was lower in the mesh-based group (OR: 0.08, 95% CI: 0.01- 0.45) (Lin *et al*., 2020). A systematic review and meta-analysis comparing mesh repair versus non-mesh repair for strangulated inguinal hernia was conducted by Hentati *et al*., There were 9 studies in this review, and the wound infection rate was lower in the mesh repair group (OR: 0.46, 95% CI: 0.20- 1.07). The recurrence rate was also lower in the mesh-based repair (OR: 0.2, 95% CI: 0.05- 0.78) (Hentati *et al*., 2014). A systematic review and meta-analysis assessing the safety of mesh repair in strangulated groin hernia was conducted by Ekwesianya *et al*., There were 7 studies with 1159 patients included in this review, and there were no differences regarding the surgical site infection rate (OR 0.88, 95% CI 0.39-1.96), seroma formation (OR 3.39, 95% CI 0.70-16.43), and recurrence rates (OR-0.33,95%CI,0.05-2.22) between the mesh and non-mesh-based procedures(Ekwesianya *et al*., 2024).

Sakamoto *et al*., compared postoperative infection after emergency inguinal hernia surgery with enterectomy between mesh and non-mesh repair. There were 668 patients in this study,223 undergoing mesh repair and 445 undergoing non-mesh repairs. There were no differences regarding surgical site infection rates between the procedures (2.5% vs 2.8%)(Sakamoto *et al*., 2022). Tastaldi *et al*., performed a retrospective study of emergency groin hernia repair, and there were 257 patients in this retrospective study, with 190 patients undergoing mesh repair and 67 undergoing tissue repairs. There were no differences regarding postoperative complications and mortality between the procedures. There were also no differences regarding the recurrence rates between the procedures (6.3% vs 6.8%), at a median follow-up rate of 48 months(Tastaldi *et al.,* 2019).

Table I

Study	Study Type	N=numbers	Wound infection	Recurrence
Hentati *et al*., 2014	Systematic Review & Meta-analysis	620	Lower wound infection rate in the mesh-based repair (OR 0.42)	Lower recurrence rate in the mesh-based repair (OR 0.2)
Lin *et al*., 2020	Systematic Review & Meta-analysis	978	No differences regarding wound infection rate between the procedures	Lower recurrence rate in the mesh-based repair (OR 0.08)
Ekwesianya *et al*., 2024	Systematic Review & meta-analysis	1159	No differences regarding the wound infection rate between the procedures (OR-0.88)	No differences regarding the recurrence rates between the procedures (OR-0.33)

Table showing the wound infection and recurrence rate between the open mesh-based and suture-based repairs for complicated inguinal hernia

The Laparoscopic Repair for Complicated Inguinal Hernia

The transabdominal preperitoneal (TAPP) and the total extraperitoneal (TEP) repairs are the laparoscopic procedures that can be performed for complicated hernias. The TAPP repair has the advantage of access to the peritoneal cavity and visibility of the intestines to assess their viability. The expertise of the surgeon and the need to convert to open surgery is important when embarking on a laparoscopic repair for a complicated hernia(G. P. C. Yang, 2017). Legnani *et al*., conducted a retrospective study on laparoscopic transabdominal preperitoneal (TAPP) repair for strangulated inguinal hernia. This study included 13 patients, with no intraoperative or postoperative complications. There were no conversions to open repair, and there were no recurrences from the procedure(Legnani *et al*., 2008).

Zanoni *et al*., conducted a retrospective study on the outcomes of the laparoscopic transabdominal preperitoneal (TAPP) in emergency inguinal hernia

repair. There were 47 patients in this study, and the mean operative time was 64 minutes; conversion to open procedure was seen in 4% of cases, and bowel resection was performed in 8.5% of cases. The patients were followed up to 1718 days, and there were no recurrences noted(Zanoni *et al*., 2022). Gokdere *et al*., also looked at the feasibility of performing the laparoscopic transabdominal preperitoneal (TAPP) repair for strangulated inguinal hernia.51 patients underwent laparoscopic transabdominal preperitoneal (TAPP) inguinal hernia repair, and bowel resection was performed in 9.8% of the cases. After a median follow-up of 16 months, the recurrence rate was 11.8%. This study showed that laparoscopic TAPP is safe and feasible for complicated inguinal hernia(Gökdere & Kesikli, 2026).

Comparison between the Open and Laparoscopic Repair for Complicated Inguinal Hernia

Sbacco *et al*., conducted a retrospective study comparing the open and laparoscopic approaches for the management of complicated inguinal hernia. There were 66 patients in this study, with 29 undergoing the Transabdominal preperitoneal (TAPP) repair and 37 undergoing the Lichtenstein repair. The TAPP repair was associated with reduced postoperative complications and shorter length of hospitalization when compared with the Lichtenstein repair(Sbacco *et al*., 2024). Chihara *et al*., conducted a comparative study between laparoscopic and open approaches for acute incarcerated and strangulated inguinal hernia in adults.106 patients were included in this study, with 54 undergoing the open approach and 52 undergoing the laparoscopic approach. The laparoscopic approach was associated with a longer operative time, but there was a reduced incidence of postoperative complications and length of hospital stay(Chihara *et al*., 2019).

Yang *et al*., conducted a retrospective study comparing laparoscopic versus open repair for strangulated inguinal hernia. There were 188 patients in this study, with 57 undergoing laparoscopic repair and 131 undergoing open repairs. The laparoscopic repair was associated with a reduced wound infection rate and shorter hospital stay when compared to the open repair(G. P. Yang *et al*., 2012). Moreno-Suero *et al*., also conducted a retrospective study comparing laparoscopic versus open repair for emergency inguinal hernia in adults. There were 463 patients in this study, with 454 patients undergoing open repair and 36 undergoing laparoscopic repairs. The wound infection rate was higher in the open repair group (5.9% vs 2.7%), and the mortality was also higher in the open repair group (0% vs 2.2%)(Moreno-Suero *et al*., 2023).

A systematic review and meta-analysis comparing laparoscopic versus open repair for complicated inguinal hernias was conducted by Lai *et al*., There were 13 studies with 38,659 patients, with 34,983 undergoing open repair and 3676 undergoing laparoscopic repairs. The laparoscopic repair was associated with a shorter length of hospital stay (MD-2.96,95%CI,4.91-1.01) and a lower wound infection rate (RR-0.29,95%CI,0.20-0.43). There were no differences regarding operative time and seroma formation between the procedures(Lai *et al*., 2025). A systematic review and meta-analysis comparing laparoscopic versus open inguinal hernia repair for strangulated inguinal hernia was conducted by Coco *et al*., There were 10 studies with 1250 patients in this review, and laparoscopic repair was associated with a shorter hospital stay(1.2days,95%CI,1.8-0.6), and a lower wound infection rate (OR 0.45, 95% CI, 0.28-0.72). The operative time was longer in the laparoscopic group (MD 15.3 min, 95% CI, 8.2- 22.4) (Coco & Leanza,2025). Aragone *et al*., conducted a retrospective study comparing laparoscopic versus open repair for complicated inguinoscrotal hernia. There were 162 patients in this study, with 83 undergoing open repair and 79 undergoing laparoscopic repairs. The laparoscopic repair was associated with reduced length of hospital stay and operative time. There were no differences in recurrence rates between the procedures (1.2% vs 1.2%)(Aragone *et al.,* 2025).

Table II

Study	Study Type	N=numbers	Wound infection rate	Operative time
Lai *et al*., 2025	Systematic review & Meta-analysis	3676	Laparoscopic repair was associated with a lower wound infection rate (RR-0.29)	No differences in the operative time between laparoscopic & open repair
Coco *et al*., 2025	Systematic review & meta-analysis	1250	Laparoscopic repair was associated with a lower wound infection rate (RR-0.45)	The operative time was longer in the laparoscopic group (MD-15.3 mins)

Table comparing the wound infection rate and operative time between the laparoscopic and open repair for complicated inguinal hernia

CONCLUSION

Complicated inguinal hernia remains a potentially life-threatening surgical emergency requiring prompt recognition and intervention. Clinical assessment supported by laboratory and radiological investigations allows timely diagnosis and optimization before surgery. Emergency operative management remains the standard of care, with bowel viability assessment and resection performed when necessary. Increasing evidence supports the selective use of prosthetic mesh even in emergency settings, provided gross contamination is absent. Laparoscopic approaches are emerging as safe and

effective alternatives in experienced hands. Future research should focus on refining patient selection for mesh implantation, evaluating minimally invasive techniques, and improving perioperative care pathways to further reduce morbidity and mortality.

Conflict of Interest: There is no conflict of interest.

REFERENCES

- Abd Ellatif, M. E., Negm, A., Elmorsy, G., Al-Katary, M., Yousef, A. E. A. M., & Ellaithy, R. (2012). Feasibility of mesh repair for strangulated abdominal wall hernias. *International Journal of Surgery*, *10*(3), 153–156. https://doi.org/10.1016/j.ijsu.2012.02.004
- Aragone, L., Rosasco, N., Gutierrez, J., Croceri, R., Medina, P., & Pirchi, D. (2025). Complicated Inguinocrural Hernias: Laparoscopic Vs. Open Surgery in the Emergency Setting. *Journal of Abdominal Wall Surgery*, *4*. https://doi.org/10.3389/jaws.2025.14408
- Bessa, S. S., Abdel-fattah, M. R., Al-Sayes, I. A., & Korayem, I. T. (2015). Results of prosthetic mesh repair in the emergency management of the acutely incarcerated and/or strangulated groin hernias: a 10-year study. *Hernia*, *19*(6), 909–914. https://doi.org/10.1007/s10029-015-1360-y
- Bessa, S. S., Katri, K. M., Abdel-Salam, W. N., & Abdel-Baki, N. A. (2007). Early results from the use of the Lichtenstein repair in the management of strangulated groin hernia. *Hernia*, *11*(3), 239–242. https://doi.org/10.1007/s10029-007-0207-6
- Chihara, N., Suzuki, H., Sukegawa, M., Nakata, R., Nomura, T., & Yoshida, H. (2019). Is the Laparoscopic Approach Feasible for Reduction and Herniorrhaphy in Cases of Acutely Incarcerated/Strangulated Groin and Obturator Hernia?: 17-Year Experience from Open to Laparoscopic Approach. *Journal of Laparoendoscopic and Advanced Surgical Techniques*, *29*(5), 631–637. https://doi.org/10.1089/lap.2018.0506
- Coco, D., & Leanza, S. (2025). Laparoscopic versus open inguinal hernia repair for strangulated inguinal hernia: a systematic review and meta-analysis. *Portuguese Journal of Surgery*, *58*(1), 77-83. https://doi.org/10.34635/rpc.1083
- De Simone, B., Birindelli, A., Ansaloni, L., Sartelli, M., Coccolini, F., Di Saverio, S., Annessi, V., Amico, F., & Catena, F. (2020). Emergency repair of complicated abdominal wall hernias: WSES guidelines. *Hernia*, *24*(2), 359–368. https://doi.org/10.1007/s10029-019-02021-8
- Ekwesianya, A. C., Ayantunde, A., & Nour, H. M. (2024). Assessing the Safety of Mesh Repair in Strangulated Groin Hernias: A Systematic Review and Meta-Analysis. *Cureus*. https://doi.org/10.7759/cureus.70496
- Elsebae, M. M. A., Nasr, M., & Said, M. (2008). Tension-free repair versus Bassini technique for strangulated inguinal hernia: A controlled randomized study. *International Journal of Surgery*, *6*(4), 302–305. https://doi.org/10.1016/j.ijsu.2008.04.006
- Gökdere, O. G., & Kesikli, S. A. (2026). Feasibility and outcomes of emergency laparoscopic TAPP repair for strangulated inguinal hernia. *BMC Surgery*, *26*(1). https://doi.org/10.1186/s12893-026-04044-2
- Hentati, H., Dougaz, W., & Dziri, C. (2014). Mesh repair versus non-mesh repair for strangulated inguinal hernia: systematic review with meta-analysis. *World Journal of Surgery*, *38*(11), 2784–2790. https://doi.org/10.1007/s00268-014-2710-0
- Kancharla, S. R., Nimmagadda, V., & Bobba, P. (2022). Desarda's repair versus Mesh hernioplasty for a strangulated inguinal hernia a randomized double-blind comparative study. *Basrah Journal of Surgery*, *28*(2), 34–41. https://doi.org/10.33762/bsurg.2022.134293.1024
- Karatepe, O., Adas, G., Battal, M., Gulcicek, O. B., Polat, Y., Altiok, M., & Karahan, S. (2008). The comparison of preperitoneal and Lichtenstein repair for incarcerated groin hernias: A randomised controlled trial. *International Journal of Surgery*, *6*(3), 189–192. https://doi.org/10.1016/j.ijsu.2008.02.007
- Kulacoglu, H. (2023). Current opinions in inguinal hernia emergencies: A comprehensive review of related evidence. In *International Journal of Abdominal Wall and Hernia Surgery* (Vol. 6, Number 3, pp. 136–158). Wolters Kluwer Medknow Publications. https://doi.org/10.4103/ijawhs.ijawhs_30_23
- Lai, S. D., Smith, N. J., Park, B., Vandal, A., & MacCormick, A. D. (2025). Laparoscopic Versus Open Approach for Emergency Repair of Groin Hernias: A Systematic Review and Meta-Analysis. *World Journal of Surgery*, *49*(10), 2733–2741. https://doi.org/10.1002/wjs.70076
- Legnani, G. L., Rasini, M., Pastori, S., & Sarli, D. (2008). Laparoscopic trans-peritoneal hernioplasty (TAPP) for the acute management of strangulated inguino-crural hernias: A report of nine cases. *Hernia*, *12*(2), 185–188. https://doi.org/10.1007/s10029-007-0305-5
- Lin, Y. Te, Weng, T. Y., & Tam, K. W. (2020). Effectiveness and Safety of Mesh Repair for Incarcerated or Strangulated Hernias: A Systematic Review and Meta-Analysis. In *World Journal of Surgery* (Vol. 44, Number 7, pp. 2176–2184). Springer. https://doi.org/10.1007/s00268-020-05430-4
- Moreno-Suero, F., Tallon-Aguilar, L., Tinoco-González, J., Sánchez-Arteaga, A., Suárez-Grau, J. M., Alvarez-Aguilera, M., Morales-Conde, S., & Padillo-Ruiz, J. (2023). Laparoscopic vs. Open Approach in Emergent Inguinal Hernia: Our

Experience and Review of Literature. *Journal of Abdominal Wall Surgery: JAWS*, *2*, 11242. https://doi.org/10.3389/jaws.2023.11242

- Ozbagriacik, M., Bas, G., Basak, F., Sisik, A., Acar, A., Kudas, I., ... & Alimoglu, O. (2015). Management of strangulated abdominal wall hernias with mesh: early results. *Northern Clinics of İstanbul*, *2*(1), 26.https://doi.org/10.14744/nci.2015.03522
- Pandey, H., Thakur, D. S., Somashekar, U., Kothari, R., Agarwal, P., & Sharma, D. (2018). Use of polypropylene mesh in contaminated and dirty strangulated hernias: short-term results. *Hernia*, *22*(6), 1045–1050. https://doi.org/10.1007/s10029-018-1811-3
- Papaziogas, B., Lazaridis, C., Makris, J., Koutelidakis, J., Patsas, A., Grigoriou, M., Chatzimavroudis, G., Psaralexis, K., & Atmatzidis, K. (2005). Tension-free repair versus modified Bassini technique (Andrews technique) for strangulated inguinal hernia: A comparative study. *Hernia*, *9*(2), 156–159. https://doi.org/10.1007/s10029-004-0311-9
- Sakamoto, T., Fujiogi, M., Ishimaru, M., Matsui, H., Fushimi, K., & Yasunaga, H. (2022). Comparison of postoperative infection after emergency inguinal hernia surgery with enterectomy between mesh repair and non-mesh repair: a national database analysis. *Hernia*, *26*(1), 217–223. https://doi.org/10.1007/s10029-021-02439-z
- Sbacco, V., Petrucciani, N., Lauteri, G., Cossa, A., Portinari, M., Brescia, A., & Garulli, G. (2024). Management of groin hernias in emergency setting: differences in indications and outcomes between laparoscopic and open approach. A single-center retrospective experience. *Langenbeck's Archives of Surgery*, *409*(1). https://doi.org/10.1007/s00423-024-03238-7
- Tastaldi, L., Krpata, D. M., Prabhu, A. S., Petro, C. C., Ilie, R., Haskins, I. N., Alkhatib, H., Tu, C., Rosenblatt, S., & Rosen, M. J. (2019). Emergent groin hernia repair: A single-center 10-year experience. *Surgery (United States)*, *165*(2), 398–405. https://doi.org/10.1016/j.surg.2018.08.001
- Tiernan, J. P., Katsarelis, H., Garner, J. P., & Skinner, P. P. (2010). Excellent outcomes after emergency groin hernia repair. *Hernia*, *14*(5), 485–488. https://doi.org/10.1007/s10029-010-0667-y
- Tomaoglu, K., & Okmen, H. (2021). Prosthetic mesh hernioplasty versus primary repair in incarcerated and strangulated groin and abdominal wall hernias with or without organ resection. Retrospective study. *Langenbeck's Archives of Surgery*, *406*(5), 1651–1657. https://doi.org/10.1007/s00423-021-02145-5
- Topcu, O., Kurt, A., Soylu, S., Akgol, G., Atabey, M., Karakus, B. C., & Aydin, C. (2013). Polypropylene mesh repair of incarcerated and strangulated hernias: A prospective clinical study. *Surgery Today*, *43*(10), 1140–1144. https://doi.org/10.1007/s00595-012-0397-0
- Towfigh, S. (2019). Incarcerated Inguinal Hernias. In *Emergency General Surgery* (pp. 377–385). Springer International Publishing. https://doi.org/10.1007/978-3-319-96286-3_33
- Tran, H. (2018). Endorsement of the HerniaSurge guidelines by the Australasian Hernia Society. In *Hernia* (Vol. 22, Number 1, p. 177). Springer-Verlag France. https://doi.org/10.1007/s10029-017-1673-0
- Wysocki, A., Kulawik, J., Poźniczek, M., & Strzałka, M. (2006). Is the Lichtenstein operation of strangulated groin hernia a safe procedure? *World Journal of Surgery*, *30*(11), 2065–2070. https://doi.org/10.1007/s00268-005-0416-z
- Yang, G. P. C. (2017). Laparoscopy in emergency hernia repair. *Annals of Laparoscopic and Endoscopic Surgery*, *2*, 107–107. https://doi.org/10.21037/ales.2017.05.05
- Yang, G. P., Chan, C. T., Lai, E. C., Chan, O. C., Tang, C. N., & Li, M. K. (2012). Laparoscopic versus open repair for strangulated groin hernias: 188 cases over 4 years. *Asian Journal of Endoscopic Surgery*, *5*(3), 131–137. https://doi.org/10.1111/j.1758-5910.2012.00138.x
- Zanoni, A. A. G., Delcarro, A., Ciccarese, F., Villa, R., Oldani, A., Giorgi, R., Rubicondo, C., Bonaldi, M., Cesana, G., Uccelli, M., De Carli, S., Ismail, A., Ferrari, D., & Olmi, S. (2022). Laparoscopic transperitoneal hernia repair (TAPP) in emergency: long-term follow-up in a high-volume centre. *Hernia*, *26*(4), 1063–1068. https://doi.org/10.1007/s10029-021-02516-3