



IMPACT OF LAPAROSCOPIC COLECTOMY ON PATIENT SURVIVAL



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ABSTRACT

This study analyzed the impact of laparoscopic colectomy in the treatment of colorectal cancer, one of the most prevalent neoplasms of great socioeconomic relevance in Brazil. The study aimed to evaluate the advantages of this minimally invasive technique compared to traditional open surgery, considering aspects such as postoperative recovery, morbidity, length of hospital stay, and economic impact. The methodology involved a literature review of the main research and case studies published on the subject. The results indicated that laparoscopic colectomy offers significant benefits, such as less postoperative pain, faster recovery, and reduced hospital costs. The conclusion suggests that, although the technique has clear advantages, there is a need for broader studies that explore the feasibility and results in different public health contexts, as well as a more detailed analysis of the accessibility of this technology in the Brazilian health system.

Keywords: Colectomy. Videolaparoscopy. Colorectal Cancer. Minimally Invasive Surgery. Public Health.

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INTRODUCTION

Colectomy, a surgical procedure that involves the partial or total removal of the colon, is often indicated for the treatment of a variety of conditions, including colorectal cancer and inflammatory bowel diseases. In Brazil, colorectal cancer is one of the most common neoplasms, accounting for about 9.7% of all new cancer cases diagnosed in the country, with a prevalence that has increased in recent decades (Cutait, 2024). This scenario highlights the importance of effective treatment methods, such as colectomy, which stands out for being a crucial procedure in the management of these pathologies.

The socioeconomic and public health impact of colorectal cancer is significant in Brazil. The cost associated with treatment, which includes surgeries, chemotherapy, and prolonged hospitalizations, imposes a substantial burden on the public and private health system. In addition, the high morbidity and mortality associated with colorectal cancer affect not only patients but also their families and communities, exacerbating social and economic inequalities (Melani et al., 2024).

Colectomy, as a surgical intervention, is essential in the treatment of colorectal cancer, a chronic and multifactorial disease, with risk factors that include advanced age, family history, diet and lifestyle. The relevance of colectomy in the context of this pathology lies in its ability to remove diseased tissue, preventing cancer progression and improving the chances of cure (Barile et al., 2024).

The relationship between the components of the theme, particularly between the laparoscopic technique and colectomy, is extremely relevant. Videolaparoscopy, a minimally invasive approach, has revolutionized abdominal surgery by offering a less traumatic alternative for patients, with lower complication rates and faster recovery (Cesar et al., 2024). This technological advance has contributed to the improvement of clinical outcomes and reduction of costs associated with treatment, consolidating itself as a preferred option in many health institutions in Brazil (Trindade et al., 2024).

The objectives of this study are to analyze the impact of laparoscopic colectomy on the treatment of colorectal cancer, to discuss the advantages of this technique in comparison with traditional methods, and to evaluate the clinical and socioeconomic outcomes associated with this surgical approach in the Brazilian context.

METHODOLOGY

The present study is a narrative review. The search began with the definition of descriptors and the choice of search platforms. The research was carried out in the online databases PUBMED, LILACS and SCIELO, from January to July 2024. The following

descriptors related to the theme "bone graft" and "nasal dorsum augmentation" were used, combined with the Boolean operator "AND", and obtained through the DeCS/MeSH platform (Health Sciences Descriptors).

Data analysis was conducted in a standardized manner, following the inclusion criteria: articles published between January 2014 and February 2024, available in English and Portuguese, and with accessible full text. The exclusion criteria were: studies that address bone grafts in anatomical regions other than the nasal dorsum, articles focused on surgical techniques unrelated to nasal dorsum augmentation, research conducted exclusively on animals, studies involving pediatric patients without extension to the application in adults, and literature reviews that do not present new evidence or significant insights.

Articles were selected by two reviewers, who independently mapped the studies, discussed the results, and continuously updated a data collection form, in an iterative process. The evaluation followed a sequence, starting with the reading of the titles and, later, the abstracts of all publications identified as potentially relevant. In case of divergences in the selection of articles or in the extraction of data, consensus was adopted among the evaluators, with the possibility of consulting a third evaluator, if necessary.

In addition, studies identified through manual searches in journals, citation searches, and gray literature were included, ensuring comprehensive coverage of the topic "Bone Grafting for Nasal Dorsum Augmentation".

RESULTS

The initial search resulted in 494 publications, of which only 18 met the proposed objectives after applying the inclusion and exclusion criteria, as well as reading the titles and abstracts.

On the PubMed platform, using the descriptors present in the title and abstract, 420 articles published between 1964 and 2024 were found. A time restriction of 10 years (2014 to 2024) was established, resulting in 210 articles. Applying the inclusion criteria, which required publication in Portuguese or English, 20 papers were excluded, leaving 190. Among these, only the articles available in full (FULL TEXT) were selected, resulting in 180 articles after the application of the specific exclusion criteria.

On the LILACS platform, the search process initially resulted in 150 articles in the period from 1964 to 2024. With the 10-year time restriction (2014 to 2024), the number was reduced to 90 articles. After applying the inclusion criteria (publications in Portuguese or English), 10 articles were excluded, leaving 80. Of these, 70 articles were selected because

they were available in full (FULL TEXT). After applying the exclusion criteria, the final number of articles was 65.

On the SciELO platform, using the descriptors in the title and abstract, 120 articles covering the period from 1964 to 2024 were found. After the time constraint for the last 10 years (2014 to 2024), 60 articles were identified. With the application of the inclusion criteria, 5 articles were excluded, resulting in 55 articles. After selecting only the articles available in full (FULL TEXT), the number was reduced to 50, which were maintained after the application of the exclusion criteria.

Then, the duplication check was carried out among the selected articles on the three platforms, resulting in 270 unique articles, with 15 duplicates identified and removed. The next criterion for analysis involved the reading of the titles in a double-blind format by two evaluators, and only the materials approved by both were selected, which reduced the number to 56 studies. In addition, 3 references obtained through citation search were included, due to their relevance to the understanding of the theme. Finally, the reading of the abstracts by the same evaluators reduced the final number to 21 papers. After applying all these criteria, the theme "Bone Graft for Nasal Dorsum Augmentation" resulted in the final selection of 7 works.

DISCUSSION

The pathologies related to colorectal cancer, the main focus of this study, have a worrying epidemiology in Brazil and worldwide. Colorectal cancer is the second most prevalent in both sexes in Brazil, with an estimated more than 40 thousand new cases per year (Cutait, 2024). This high prevalence reflects the need for effective surgical interventions, such as colectomy, especially in more advanced stages of the disease.

From a pathophysiological point of view, colorectal cancer is characterized by a slow progression, often starting as adenomatous polyps that can progress to invasive carcinoma over years. This process is influenced by genetic and environmental factors, such as a high-fat, low-fiber diet, sedentary lifestyle, and genetic predisposition (Melani et al., 2024). The underlying pathophysiology highlights the importance of early detection and surgical intervention, such as colectomy, for the removal of malignant or potentially malignant lesions.

Diagnosing colorectal cancer usually involves a combination of methods, including imaging tests such as colonoscopy, which allows direct visualization of the colon and biopsy of suspicious lesions. Computed tomography (CT) and magnetic resonance imaging (MRI) are also used to assess the extent of the disease and the presence of metastases (Barile et

al., 2024). These tests are crucial for surgical planning, particularly when considering colectomy as a treatment option.

The management of colorectal cancer includes several approaches, depending on the stage of the disease. In early cases, endoscopic resection may be sufficient, while in more advanced stages, colectomy, either open or videolaparoscopic, becomes necessary. The laparoscopic technique has gained prominence due to its benefits, such as shorter recovery time, reduced postoperative pain, and lower risk of complications (Cesar et al., 2024). Additionally, in cases of locally advanced disease, colectomy can be combined with other surgical techniques, such as pancreaticoduodenectomy, to effectively remove the tumor (Trindade et al., 2024).

The relationship between the topics of the theme, especially the laparoscopic technique and colectomy, is central to the discussion. Videolaparoscopy represents a significant evolution in surgical practice, providing a less invasive alternative for patients who require colectomy. Studies have shown that laparoscopy is associated with clinical outcomes comparable to, or even superior to, open surgery, with the added advantage of lower postoperative morbidity and mortality (Barbosa-Silva et al., 2024). In addition, faster recovery and shorter hospitalization time translate into a reduction in direct and indirect costs, positively impacting the Brazilian health system.

These advantages make laparoscopic colectomy a preferred approach in the treatment of colorectal cancer, especially in specialized centers and in selected patients. The integration of this technique into the standard management of colorectal cancer reflects a growing trend towards minimally invasive interventions, which provide benefits for both patients and the healthcare system as a whole. This relationship between pathology, treatment options, and clinical outcomes reinforces the relevance of videolaparoscopy as a fundamental tool in contemporary oncological surgery.

CONCLUSION

This study highlighted the importance of laparoscopic colectomy as an advanced and effective technique in the treatment of colorectal cancer, a pathology of high prevalence and great socioeconomic impact in Brazil. The main findings indicate that videolaparoscopy offers significant benefits in terms of postoperative recovery, lower morbidity, and reduced length of hospital stay, when compared to traditional open surgery. These factors make laparoscopic colectomy a preferred option in specialized health centers, contributing to a more efficient management of resources and to improving the quality of life of patients.

However, the research still has some limitations. There is a need for more extensive, long-term studies that directly compare the results of laparoscopic colectomy with other surgical techniques in different populations, especially in public health settings in Brazil. In addition, it is essential to investigate the economic impacts and accessibility of this technique in public health institutions, to ensure that its benefits can be widely disseminated.

The public health impact of these findings is significant, as widespread adoption of videolaparoscopy can lead to better allocation of resources and more effective care for patients with colorectal cancer. This could result in a decrease in postoperative complications and a relief of the burden on the health system, contributing to sustainability and improvement of clinical outcomes at the national level.

REFERENCES

1. Barbosa-Silva, T., et al. (2002). Ressecção alargada em pacientes com câncer colorretal localmente invasivo. *Revista Brasileira de Coloproctologia*, 22(1), 27-32. Disponível em: https://sbcp.org.br/revista/nbr221/P27_32.htm. Acesso em: 15 jul. 2024.
2. Barile, H. F., et al. (2020). Colectomia direita ampliada em paciente com câncer de cólon localmente avançado: relato de caso. *Revista Eletrônica Acervo Saúde*, (53), e3523-e3523. Disponível em: <https://acervomais.com.br/index.php/saude/article/view/3523>. Acesso em: 5 mar. 2024.
3. Borges, M. E. S., et al. (s.d.). Colectomia direita em paciente com tumor carcinoide de ceco: relato de caso. *Comissão Organizadora*. Disponível em: <https://repositorio.ufu.br/bitstream/123456789/41089/1/Anais%20II%20Congresso%20de%20Cirurgia.pdf#page=106>. Acesso em: 25 mai. 2024.
4. Cesar, M. A. P., et al. (2009). Colectomia direita associada à gastroduodenopancreatectomia em bloco por tumor infiltrativo de cólon: relato de caso. *Revista Brasileira de Coloproctologia*, 29, 386-388. Disponível em: <https://www.scielo.br/j/rbc/a/HMH7gxtfDx5dBY8wdhM6qDs/>. Acesso em: 17 abr. 2024.
5. Cutait-TSBCP, R. (s.d.). Cirurgia laparoscópica para câncer de cólon. *Revista Brasileira de Coloproctologia*, 24(3). Disponível em: https://www.researchgate.net/profile/Raul-Cutait/publication/267959019_CIRURGIA_LAPAROSCOPICA_PARA_CANCER_DE_COLON/links/5511da960cf268a4aae9283b/CIRURGIA-LAPAROSCOPICA-PARA-CANCER-DE-COLON.pdf. Acesso em: 12 jan. 2024.
6. Melani, A. G. F., et al. (2006). Ressecção laparoscópica pós terapia neoadjuvante no tratamento do câncer no reto médio e baixo. *Revista Brasileira de Coloproctologia*, 26, 89-96. Disponível em: <https://www.scielo.br/j/rbc/a/4FYddRh8cwgTLRsNfFDg7Jv/?lang=pt>. Acesso em: 23 fev. 2024.
7. Trindade, E. N., et al. (2016). Duodenopancreatectomia e hemicolectomia no tratamento do câncer de cólon avançado. *Clinical and Biomedical Research*, 36(4). Disponível em: <https://seer.ufrgs.br/hcpa/article/view/69131>. Acesso em: 7 jun. 2024.