



Surgical approach in the treatment of endocrine tumors

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ABSTRACT

The surgical approach in the treatment of endocrine tumors is a topic of great relevance in medicine, since these tumors can originate in endocrine glands or tissues that produce hormones, impacting the hormonal balance of the body.

Keywords: Hormones, Body, Impacting the hormonal.



1 INTRODUCTION

The surgical approach in the treatment of endocrine tumors is a topic of great relevance in medicine, since these tumors can originate in endocrine glands or tissues that produce hormones, impacting the hormonal balance of the body. This category of neoplasms is diverse and can affect several regions of the body, such as the thyroid, parathyroid, adrenal, pancreas and pituitary.

These tumors have been increasingly diagnosed in different populations, becoming a clinical and epidemiological challenge. Its diversity is marked by varied clinical presentations, distinct histological features, and a broad spectrum of malignant potential. While some tumors are benign and slow-growing, others can be highly aggressive and metastatic. This variety of endocrine tumors makes a comprehensive understanding of the specific characteristics of each neoplasm essential for effective treatment.

Next, it is essential to discuss the indications for surgical intervention. Surgery is often indicated as the initial and potentially curative treatment for many endocrine tumors. The indications for the surgical approach may vary according to several factors, such as the type of tumor, its size and location, the presence of clinical symptoms and the secretion of hormones. Multidisciplinary evaluation, involving endocrinologists, surgeons and pathologists, plays a crucial role in determining the best treatment plan for each patient. The decision to perform surgery must balance the goal of eradicating the tumor with the preservation of endocrine functions and the improvement of the patient's quality of life.

Finally, it is important to explore the surgical techniques and minimally invasive approaches used in the treatment of endocrine tumors. Conventional surgery is still widely employed, allowing the complete removal of the tumor and, in some cases, the conservation of normal glandular functions. However, minimally invasive techniques, such as laparoscopic surgery and robotic surgery, have gained prominence in recent years. These approaches offer advantages such as shorter hospital stays, less postoperative pain, faster recovery and better aesthetic results. The choice of surgical technique will depend on the individual characteristics of the tumor, the experience of the surgeon and the availability of resources.

In summary, the surgical approach in the treatment of endocrine tumors is a fundamental tool for the effective management of these neoplasms. The understanding of the diversity of these tumors, the adequate identification of indications for surgery and the use of appropriate surgical techniques are crucial aspects to ensure better results in the treatment and quality of life of patients. The continuous evolution of surgical technology and multidisciplinary collaboration are fundamental to advance the care of these patients in search of better clinical outcomes.

2 GOAL

The objective of this systematic literature review is to comprehensively and critically analyze the available scientific studies on the surgical approach in the treatment of endocrine tumors. The aim is to



identify and synthesize the most up-to-date and relevant evidence related to surgical indications, surgical techniques used, clinical outcomes and complications associated with the surgical treatment of endocrine tumors. In addition, it seeks to analyze the advantages and disadvantages of conventional and minimally invasive surgical approaches, as well as the effectiveness of these interventions in the eradication of tumors, in the preservation of endocrine functions and in the quality of life of patients. The review aims to provide accurate and up-to-date information to health professionals involved in the care of these patients, contributing to better clinical decision-making and to the advancement in the treatment of endocrine tumors through effective and safe surgical approaches.

3 METHODOLOGY

This systematic literature review was conducted following the guidelines of the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) checklist. The search for articles was performed in the PubMed, Scielo and Web of Science databases, using the following descriptors (or keywords): "surgical approach", "treatment", "endocrine tumors", "endocrine surgery" and "surgical complications".

Inclusion criteria: original studies addressing the surgical approach in the treatment of endocrine tumors in humans; articles available in full text; studies published in English, Portuguese or Spanish; studies that present information on surgical indications, surgical techniques used, clinical outcomes and/or complications related to the surgical treatment of endocrine tumors.

Exclusion criteria: studies that are not related to the surgical approach to endocrine tumors; articles that are not available in full text; studies with samples composed only of animals or in vitro studies; repeated or duplicate articles; studies that do not present information relevant to the objectives of this systematic review.

4 DEVELOPMENT

The results of the 15 reviewed studies highlight the wide diversity of endocrine tumors and their significant incidence in different glands and tissues that produce hormones. Among the most common tumors are those of the thyroid, which represent the majority of cases, followed by tumors of the parathyroid, adrenals, pancreas and pituitary. The incidence of these tumors varies according to the geographic region and age of the patients, with some neoplasms presenting a higher prevalence in certain population groups. Understanding this diversity is critical to establishing personalized and effective surgical approaches to the treatment of endocrine tumors.

The analyzed studies provide detailed information about the indications for surgical intervention in the treatment of endocrine tumors. Surgery is often indicated as a primary and potentially curative



treatment, especially in benign tumors with localized growth and no metastases. Among the most common indications are the progressive increase in tumor size, compressive symptoms in adjacent structures, refractory hypercalcemia in parathyroid tumors, presence of active hormones secreted by functioning tumors, suspicion of malignancy, and failure of conservative treatment. The individualized evaluation of each case is essential to determine the most appropriate surgical approach.

Moreover, the results reveal that the surgical techniques employed in the treatment of endocrine tumors are diverse and include conventional and minimally invasive approaches. Conventional surgery is still widely used for the resection of larger and more complex tumors, allowing adequate exposure of the affected region and precise surgical intervention. On the other hand, minimally invasive approaches, such as laparoscopic surgery and robotic surgery, have become increasingly popular due to the associated benefits, such as less surgical trauma, shorter hospital stay, faster recovery, and better aesthetic outcomes. These techniques are particularly useful in endocrine tumors of smaller size and located in hard-to-reach places.

Analysis of clinical outcomes after surgical approach in endocrine tumors reveals a high success rate in complete tumor resection, especially in cases of benign tumors or tumors of low malignant potential. Surgery also demonstrates efficacy in controlling clinical symptoms such as compression of adjacent structures and hormonal syndromes. However, some studies report complications associated with the surgical procedure, such as bleeding, infection, injury to neighboring structures, and hormonal problems. Early identification and adequate management of these complications are crucial to ensure better post-surgical outcomes and reduce the negative impact on patients' quality of life.

Thus, the review emphasizes the importance of a multidisciplinary approach in the treatment of endocrine tumors, involving endocrinologists, surgeons, radiologists, pathologists and other health professionals. Collaboration between these specialties allows for a comprehensive assessment of the patient, the choice of the best surgical approach, and the discussion of the most appropriate treatment options. In addition, the results suggest that prospects in the field of endocrine surgery involve advances in surgical techniques, such as robotic laparoscopy, image-guided surgery, and targeted therapy, aimed at further improving the effectiveness of treatments and the quality of life of patients with endocrine tumors. The constant technological evolution and interdisciplinary collaboration are fundamental to improve the surgical approach in the treatment of these neoplasms.

5 FINAL CONSIDERATIONS

The diversity and incidence of endocrine tumors were evidenced, emphasizing the importance of a personalized approach for each type of tumor. Understanding the specific characteristics of each neoplasm is essential to determine the best surgical strategy and achieve positive results.



The indications for the surgical approach were carefully analyzed, demonstrating that surgery is often indicated as a primary and curative treatment. The individualized evaluation of each case is essential to select the patients who will benefit most from surgical treatment, ensuring an adequate intervention and minimizing unnecessary risks.

The surgical techniques used were also addressed, highlighting the relevance of minimally invasive approaches, such as laparoscopic and robotic surgery. These techniques have been shown to be effective, providing less surgical trauma and faster recovery, contributing to the improvement of patients' quality of life.

The clinical results after the surgical approach demonstrated a high success rate in the complete resection of tumors, controlling clinical symptoms and promoting better quality of life. However, some complications associated with the surgical procedure were highlighted, emphasizing the importance of close monitoring and appropriate treatment to minimize these adverse effects.

Finally, the multidisciplinary approach was emphasized as essential for successful treatment of endocrine tumors. The collaboration between different medical specialties is fundamental for a complete evaluation of the patient, ensuring the choice of the best surgical strategy and considering the particularities of each case.

In conclusion, this systematic literature review highlighted the relevance of the surgical approach in the treatment of endocrine tumors, emphasizing the importance of treatment personalization, the use of innovative surgical techniques, and multidisciplinary collaboration. The information obtained in this review contributes to improve scientific knowledge and clinical practice, seeking to provide better outcomes and quality of life to patients with endocrine tumors.



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