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Clinical manifestations and repercussions of pancoast tumor

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LITERATURE REVIEW

RESUMO

Introdução: O tumor de Pancoast, também conhecido como carcinoma apical de pulmão, é uma neoplasia que se localiza na parte superior do pulmão e frequentemente está associado a manifestações clínicas complexas devido à sua proximidade com estruturas anatômicas importantes, como os nervos e vasos que se dirigem ao membro superior e à região cervical. Essa localização peculiar resulta em sintomas que podem incluir dor no ombro, síndrome de Horner e dores torácicas, além de complicações que afetam a qualidade de vida dos pacientes. O entendimento dessas manifestações clínicas e suas repercussões é crucial para o diagnóstico e tratamento eficaz da condição, dada a sua natureza agressiva e a tendência a se disseminar. Objetivo: Analisar as manifestações clínicas e repercussões do tumor de Pancoast, visando consolidar as informações disponíveis e contribuir para o conhecimento sobre a apresentação dessa condição. Metodologia: A metodologia seguiu as diretrizes do checklist PRISMA e utilizou as bases de dados PubMed, Scielo e Web of Science. Foram empregados cinco descritores: "tumor de Pancoast", "manifestações clínicas", "síndrome de Horner", "carcinoma apical de pulmão" e "complicações". Os critérios de inclusão consistiram em estudos publicados nos últimos 10 anos, artigos revisados por pares e que abordaram especificamente o tumor de Pancoast. Os critérios de exclusão envolveram artigos que não apresentaram dados clínicos relevantes, revisões gerais sobre câncer de pulmão sem foco específico e estudos em idiomas diferentes do português ou inglês. Resultados: A análise dos artigos selecionados revelou que as manifestações clínicas mais frequentes do tumor de Pancoast incluem dor intensa, fraqueza do membro superior e alterações autonômicas, como a síndrome de Horner, que se manifesta por ptose e miose. Além disso, os estudos ressaltaram a importância do diagnóstico precoce para melhorar o prognóstico e as opções terapêuticas. Conclusão: Em síntese, o tumor de Pancoast se apresenta com um quadro clínico característico que requer atenção multidisciplinar. O conhecimento aprofundado das suas manifestações e repercussões permite intervenções mais eficazes, potencializando o manejo clínico e a qualidade de vida dos pacientes afetados.

Palavras-chave: "tumor de Pancoast", "manifestações clínicas", "síndrome de Horner", "carcinoma apical de pulmão" e "complicações".

ABSTRACT

Introduction: Pancoast tumor, also known as apical lung carcinoma, is a neoplasm located in the upper part of the lung and is often associated with complex clinical manifestations due to its proximity to important anatomical structures, such as nerves and vessels that supply the upper limb and cervical region. This peculiar location results in symptoms that may include shoulder pain, Horner's syndrome, and chest pain, in addition to complications that affect the quality of life of patients. Understanding these clinical manifestations and their repercussions is crucial for the diagnosis and effective treatment of the condition, given its aggressive nature and tendency to spread. Objective: To analyze the clinical manifestations and repercussions of Pancoast tumor, aiming to consolidate the available information and contribute to the knowledge about the presentation of this condition. Methodology: The methodology followed the PRISMA checklist guidelines and used the PubMed, Scielo, and Web of Science databases. Five descriptors were used: "Pancoast tumor", "clinical manifestations", "Horner syndrome", "apical lung carcinoma" and "complications". Inclusion criteria consisted of studies published in the last 10 years, peer-reviewed articles that specifically addressed Pancoast tumor. Exclusion criteria included articles that did not present relevant clinical data, general reviews on lung cancer without a specific focus and studies in languages other than Portuguese or English. Results: Analysis of the selected articles revealed that the most frequent clinical manifestations of Pancoast tumor include severe pain, upper limb weakness and autonomic alterations, such as Horner syndrome, which manifests as ptosis and miosis. In addition, the studies highlighted the importance of early diagnosis to improve prognosis and therapeutic options. Conclusion: In summary, Pancoast tumor presents with a characteristic clinical picture that requires multidisciplinary attention. In-depth knowledge of its manifestations and repercussions allows for more effective interventions, enhancing clinical management and the quality of life of affected patients.

Keywords: "Pancoast tumor", "clinical manifestations", "Horner syndrome", "apical lung carcinoma" and "complications".

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INTRODUCTION:

Pancoast tumor, an aggressive form of lung carcinoma, stands out for its specific clinical manifestations that reflect its location in the upper part of the lung. Among the most common symptoms, shoulder pain becomes one of the main indicators, often radiating to the cervical region and limiting the mobility of the upper limb. This intense pain can be confused with other orthopedic conditions, making initial diagnosis difficult. In addition to pain, Horner's syndrome, which results from the involvement of sympathetic nerve pathways, is a notable manifestation. This syndrome is characterized by eyelid ptosis, miosis and facial anhidrosis, providing valuable clues about the presence of the tumor and its impact on autonomic function.

The location of Pancoast tumor also implies significant anatomical complications. The proximity to vital structures, such as the pleura, blood vessels and nerves, makes the neoplasia especially challenging. Involvement of the intercostal nerves can result in pain and respiratory dysfunction, while compression of blood vessels can lead to circulatory complications, affecting the perfusion of the upper limb. These factors not only worsen the clinical picture but also make treatment difficult, requiring a careful and multidisciplinary approach to disease management. Understanding these manifestations and repercussions is essential to improve early recognition and effective management of Pancoast tumor.

Early diagnosis of Pancoast tumor is essential to increase the chances of successful treatment. Rapid detection of this neoplasm can be challenging due to the similarity of its symptoms to other conditions, such as musculoskeletal disorders. Imaging tests, such as computed tomography and magnetic resonance imaging, play a crucial role in accurately identifying the lesion, allowing healthcare professionals to assess the extent of the disease and plan the best therapeutic approach. The earlier the tumor is recognized, the better the options available to the patient, directly influencing the prognosis.

A multidisciplinary approach is an essential aspect in the management of Pancoast tumor. A team consisting of oncologists, thoracic surgeons, radiologists and pain specialists is necessary to ensure a comprehensive treatment strategy. This

collaboration allows professionals to combine knowledge and experience, tailoring the treatment plan according to the specific needs of each patient. Such integration is vital, since decisions about surgical interventions, chemotherapy and radiotherapy require careful analysis of the patient's clinical conditions and general condition.

Treatment of this form of cancer usually involves a combination of surgery, chemotherapy and radiotherapy, reflecting the complexity of the disease. The choice of treatment depends on the extent of the neoplasia and the presence of metastases. Surgery can be more effective when performed in the early stages, while adjuvant therapies aim to control spread and improve survival. Understanding these therapeutic modalities and their implications is crucial so that health professionals can offer the best options to patients, considering not only efficacy, but also quality of life during and after treatment.

METHODOLOGY

The methodology adopted to conduct the systematic review was based on the PRISMA checklist guidelines, ensuring transparency and rigor in the selection of studies. The databases consulted included PubMed, Scielo and Web of Science, aiming to cover a wide range of relevant publications on Pancoast tumor. Five descriptors were used to search for articles: "Pancoast tumor", "clinical manifestations", "Horner's syndrome", "apical lung carcinoma" and "complications". This combination of terms allowed for effective filtering of the content, directing the search to publications that addressed the manifestations and repercussions of this neoplasm.

The inclusion criteria were rigorously defined to ensure the relevance and quality of the selected studies. First, articles that addressed Pancoast tumor in its entirety were included, allowing for a comprehensive analysis of the condition. In addition, only studies published in the last ten years were considered, ensuring that the information reflected the most recent knowledge. Peer-reviewed articles were prioritized, ensuring that the quality of the research was maintained. Additionally, studies that presented substantial clinical data were included, contributing to the understanding of the manifestations and repercussions of the tumor. Finally, studies in Portuguese or English were selected, allowing for an accessible and comprehensible analysis.

In contrast, exclusion criteria were established to discard publications that did not meet the necessary parameters for the review. Articles that did not specifically focus on Pancoast tumor were excluded, prioritizing those that presented relevant clinical data. Studies that did not present updated information or that were published outside the ten-year period were also disregarded. General review studies on lung cancer, without a focus on Pancoast tumor, were excluded, as were those written in languages other than Portuguese or English. In addition, articles that did not undergo peer review were eliminated, ensuring that only high-quality research was included in the analysis. The application of these criteria ensured the rigorous selection and relevance of the studies incorporated into the systematic review.

RESULTS

Pancoast tumor presents with a set of clinical manifestations that often indicate its apical location in the lung. Among the most common symptoms, shoulder pain stands out as one of the first complaints of patients. This pain, usually intense, can radiate to the cervical region and is often confused with musculoskeletal conditions. This confusion can delay correct diagnosis, which is particularly worrying, since early detection is directly related to prognosis. In addition, pain can be accompanied by weakness in the upper limb, further hindering mobility and affecting the quality of life of patients.

Another important symptom associated with Pancoast tumor is Horner's syndrome. This condition occurs due to impairment of the sympathetic pathways that innervate the face and eye, resulting in clinical characteristics such as eyelid ptosis, miosis and facial anhidrosis. The presence of this syndrome serves as a valuable clinical sign, since it can direct health professionals to the possibility of an apical tumor. Furthermore, early identification of Horner syndrome not only aids in diagnosis but also allows for better planning of therapeutic intervention, contributing to more effective management of the condition.

Early detection of Pancoast tumor is essential to improve the chances of successful treatment and, consequently, the prognosis of patients. Diagnosis often involves a combination of clinical evaluation and imaging tests. Tests such as computed

tomography and magnetic resonance imaging are crucial tools that allow detailed visualization of the lesion and its relationship with adjacent structures. These technologies help identify the extent of the tumor, which is vital for determining the best therapeutic approach. Early recognition of the condition is therefore essential to initiate interventions that can positively impact the patient's survival and quality of life.

In addition to imaging tests, clinical history and symptom presentation play a significant role in early identification of the tumor. The combination of reports of persistent pain and the presence of Horner syndrome may prompt professionals to order additional tests, speeding up the diagnostic process. Given the complexity and aggressiveness of Pancoast tumor, careful attention to signs and symptoms is essential to ensure that patients receive the necessary treatment at the most favorable stage of the disease. This proactive approach not only improves clinical outcomes but also provides a foundation for the psychological and social support that patients often require when facing a challenging oncologic diagnosis.

A multidisciplinary approach to the treatment of Pancoast tumor is essential to ensure effective and comprehensive management of the disease. This neoplasm presents complex challenges due to its location and varied clinical manifestations, which makes collaboration across a diverse team essential. Professionals from different specialties, such as oncologists, thoracic surgeons, radiologists, and pain specialists, work together to develop a personalized treatment plan that meets the specific needs of each patient. This collaboration not only optimizes clinical interventions but also enriches the discussion on best practices, leading to improved outcomes.

Additionally, effective communication between members of the multidisciplinary team is a key factor in the success of treatment. Regular meetings and ongoing exchange of information allow professionals to assess the evolution of the clinical picture and adjust strategies as needed. This interaction is particularly important since Pancoast tumor can require rapid changes in the treatment plan in response to disease progression or the occurrence of side effects. Therefore, a collaborative effort ensures that all aspects of the patient's health are considered, providing holistic and integrated support throughout the treatment process.

Surgical treatment of Pancoast tumor is often considered the first line of treatment, especially when the neoplasm is diagnosed in its early stages. Surgical resection aims to remove the tumor and the surrounding compromised tissue, which may include parts of the lung, pleura and, in some cases, adjacent structures such as nerves and ribs. The success of surgery depends not only on the technical skill of the surgeon, but also on careful patient selection. Those with localized tumors, without evidence of metastasis, generally have better postoperative outcomes, which highlights the importance of early diagnosis.

After surgery, the implementation of adjuvant therapies, such as chemotherapy and radiotherapy, may be recommended to minimize the risk of recurrence. These interventions are essential, as they help eliminate remaining tumor cells that may not have been captured during surgery. The choice of treatment modalities depends on the individual assessment of the patient and the initial response to surgical treatment. Thus, the combination of surgical interventions with complementary therapies is essential to improve the survival rate and quality of life of patients diagnosed with Pancoast tumor, demonstrating the effectiveness of an integrated and strategic approach in combating this challenging neoplasm.

Treatment of Pancoast tumor often involves a combination of surgery, chemotherapy, and radiotherapy, reflecting the complexity of this neoplasm and the need for a multifaceted approach. Surgery is generally considered the first line of treatment, especially in cases where the tumor is detected early and is confined to the original site. Surgical resection may involve removal of the tumor as well as adjacent tissues, such as the pleura and part of the lung, to ensure that all cancer cells are eliminated. The effectiveness of this procedure depends on careful patient selection, since the presence of metastases or involvement of critical structures can complicate the intervention and negatively impact the prognosis.

After surgery, chemotherapy and radiotherapy are often integrated as adjuvant strategies to increase the chances of a favorable outcome. Chemotherapy can be used before surgery (neoadjuvant) to reduce the size of the tumor, facilitating its removal, or after the procedure (adjuvant) to eliminate remaining tumor cells. Radiotherapy, in turn,

is applied to direct radiation to the tumor, helping to control the progression of the disease and minimize the risk of recurrence. This combination of treatments offers a comprehensive approach, allowing healthcare professionals to adapt therapies according to the patient's response and the evolution of the condition. Thus, the management of Pancoast tumor requires careful analysis and strategic implementation of different therapeutic modalities, always aiming to maximize the benefits for the patient.

Pancoast tumor is associated with significant anatomical complications that arise due to its apical location, close to critical structures. Compression of nerves and blood vessels can result in severe pain and dysfunctions that affect the functionality of the upper limb. The intercostal nerves and the brachial plexus, frequently involved by the expansion of the tumor, lead to symptoms such as weakness and paresthesia, compromising not only mobility, but also the quality of life of patients. Thus, the presence of these complications makes early diagnosis and adequate management of the condition even more urgent, since they can worsen the clinical picture and make treatment options more difficult.

Furthermore, the repercussions of vascular compression are equally worrying. Obstruction of blood vessels can result in impaired circulation, leading to episodes of pain and possible more serious complications, such as thrombosis. This situation requires careful assessment and constant monitoring by the multidisciplinary team, who must be alert to any sign of deterioration in the patient's health. Therefore, recognition and appropriate management of these anatomical complications are essential to optimize treatment and improve clinical outcomes.

Horner syndrome is a notable clinical manifestation associated with Pancoast tumor and results from involvement of the cervical sympathetic pathways. This condition is characterized by a set of signs, including ptosis, miosis, and facial anhidrosis, occurring on one side of the face. The development of Horner syndrome not only provides valuable clues for diagnosis, but also illustrates the impact of the tumor on the functional anatomy of the body. Identification of this syndrome during clinical evaluation may lead health professionals to consider the possibility of an apical tumor, thus directing the diagnostic investigation more effectively.

In addition, Horner syndrome can affect the patient's perception of their condition and treatment. Visible symptoms and facial asymmetry can cause concern and anxiety, leading to the need for additional psychological support. Therefore, attention should not be limited to oncological treatment alone, but should also include strategies to deal with the emotional and social implications that this syndrome can cause. In summary, a detailed understanding of Horner syndrome and its appropriate management are essential for a holistic approach to the treatment of Pancoast tumor, ensuring that all dimensions of the patient's health are addressed.

Assessing the quality of life of patients with Pancoast tumor is a fundamental aspect of the management of the disease, since symptoms and therapeutic interventions can significantly impact physical and emotional well-being. Chronic pain, limited mobility and complications associated with the condition often lead to a decrease in functional capacity, affecting daily activities and social interaction. Therefore, assessing the effects of the disease and treatment on quality of life should be a priority, as it allows healthcare professionals to identify areas that require intervention and additional support.

In addition, the use of quality of life questionnaires and assessment scales, such as the EORTC QLQ-C30, allows the measurement of the physical, psychological and social impacts of the condition. These tools help to capture the patient's experience in a comprehensive way, providing valuable data that can guide therapeutic decisions and support strategies. Therefore, integrating this assessment into the treatment process not only improves understanding of the patient's experience, but also contributes to a more focused approach to their individual needs.

Ongoing research into Pancoast tumor plays a crucial role in advancing knowledge and improving treatment. Recent clinical trials are seeking to identify new therapies and interventions that may improve survival rates and reduce adverse effects associated with conventional approaches. In addition, research into biomarkers and genetic factors has the potential to personalize treatment, allowing healthcare professionals to tailor interventions to the specific characteristics of each patient. This evolution in understanding the disease reflects the importance of maintaining a constant focus on research to improve the available options.

In addition, the exchange of information between research institutions and clinics is essential for the dissemination of new discoveries and practices. Conferences, publications, and collaborative networks facilitate communication between experts, enabling best practices to be implemented in different clinical settings. This knowledge sharing not only drives research, but also ensures that patients have access to the most advanced and effective treatment options. Therefore, continued research and collaboration between professionals are essential to address the challenges presented by Pancoast tumor, promoting advances that directly benefit affected patients.

The psychosocial aspects related to the diagnosis and treatment of Pancoast tumor are fundamental to the comprehensive management of patients. The emotional impact of a cancer diagnosis can be profound, often leading to feelings of anxiety, depression, and social isolation. These feelings arise not only from concerns about health, but also from the physical limitations imposed by symptoms and side effects of therapies. Thus, it is crucial that health professionals recognize and address these aspects, offering psychological support and adequate resources to help patients cope with the emotional stress resulting from the condition.

In addition, social support plays a significant role in the patient's recovery and adaptation to treatment. Support groups and family support networks are valuable as they provide a safe space to share experiences and emotions. Interaction with other individuals facing similar challenges can decrease feelings of loneliness and provide a sense of community. Therefore, integrating psychosocial interventions into the treatment plan not only promotes emotional well-being but may also contribute to better clinical outcomes, as emotionally supported patients tend to respond more positively to medical interventions.

Finally, education and awareness about the condition are essential to empower patients. Informing patients about the disease, available treatments, and potential consequences helps reduce uncertainty and fear, allowing them to make more informed decisions about their health. Healthcare professionals should facilitate this educational process by providing materials and resources that clearly explain what patients can expect throughout their treatment. This knowledge not only improves understanding of the condition, but also encourages an active and collaborative approach to health

management, promoting patients' self-confidence and resilience in the face of adversity.

CONCLUSION

The analysis of Pancoast tumor revealed crucial aspects that directly influenced the management and prognosis of the disease. Early recognition of clinical manifestations, such as shoulder pain and Horner syndrome, has proven to be essential for timely diagnosis, allowing for more effective interventions. Scientific studies have emphasized that early detection not only increased survival rates but also improved patients' quality of life by reducing complications and promoting more targeted treatments.

A multidisciplinary approach has emerged as an essential element in the treatment of Pancoast tumor. Collaboration between oncologists, thoracic surgeons, and other specialists ensured comprehensive and personalized treatment planning that was adapted to the specific needs of each patient. Scientific literature has indicated that this collaborative strategy resulted in better clinical outcomes, as it allowed the identification of anatomical complications and the implementation of adjuvant interventions, such as chemotherapy and radiotherapy, which were essential for controlling the disease and minimizing recurrence.

In addition, the psychosocial impact of the condition should not be underestimated. Patients often faced significant emotional challenges, including anxiety and depression, which were exacerbated by the physical limitations imposed by the tumor and treatments. Including psychological support and social networks as part of comprehensive management has been shown to be beneficial, providing a space for sharing experiences and emotional strengthening, which research has shown to contribute to improved adherence to therapy and increased patient resilience.

Finally, ongoing research into Pancoast tumor has highlighted the need for new treatments and personalized interventions. Research into biomarkers and targeted therapies is ongoing, offering hope that future advances in medicine may further improve outcomes. Thus, the combination of early diagnosis, collaborative treatment, psychosocial support, and ongoing research has formed the basis for more effective management of Pancoast tumor, reflecting the evolution of knowledge in the field and

the importance of a holistic approach for affected patients.

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