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REVIEW

Evaluation of the patient undergoing respiratory endoscopic procedures

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KEYWORDS
Endoscopic techniques;
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Abstract Endoscopic techniques can be considered reasonably safe since they are widely used and the rate of complications is extremely low. Still complications do occur and in order to avoid them, the evaluation of the patient before and after any intervention is of the utmost importance. In this article, issues concerning the preparation of the patient and informed consent, the general assessment – medical history, current medications, physical examination, laboratory tests, radiological evaluation and analysis of the indication and planning will be addressed. The post intervention evaluation will also be discussed, in order to detect and treat complications and decide on the final guidance for the patient after discharge.

There are very few up-to-date studies or publications dealing with these areas, the evidence level remains low and most recommendations are based on common sense and expert opinion.

PALAVRAS-CHAVE
Técnicas endoscópicas;
Broncoscopia;
Toracoscopia;
Pré-avaliação;
Pós-avaliação

Avaliação do paciente submetido a procedimentos endoscópicos

Resumo As técnicas endoscópicas podem ser consideradas razoavelmente seguras dado que são amplamente utilizadas e o índice de complicações é extremamente reduzido. Ainda assim, ocorrem complicações e, para as evitar, a avaliação do paciente antes e depois de qualquer intervenção, é da maior importância. Neste artigo, serão abordadas as questões relacionadas com a preparação do paciente e o consentimento esclarecido, a avaliação geral – historial médico, medicação actual, exame físico, testes de laboratório, avaliação radiológica e análise da indicação e planeamento. A avaliação após a intervenção também será discutida, para detectar e tratar complicações e determinar a orientação final para o paciente, após a alta.

Existem muito poucos estudos ou publicações actualizados que abordem estas áreas, o nível de evidência permanece baixo e a maioria das recomendações baseiam-se no bom senso e na opinião de peritos.

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Introduction

Endoscopic techniques, flexible, rigid bronchoscopy and thoracoscopy are central tools in the evaluation and treatment of respiratory disorders and their use has been steadily growing. The first rigid bronchoscopy was performed in 1897 when Gustav Killian removed a piece of pork bone from the bronchus of a 63-year-old farmer, thus avoiding a tracheotomy.[1,2] IKEDA[3] in the late 60s pioneered fiberoptic bronchoscopy as a tool to enter subsegmental bronchi and obtain specimens for early diagnosis of lung cancer. During the last 30 years the flexible bronchoscope has become the diagnostic instrument of choice for visualization of the bronchial tree as it is less invasive, does not require general anaesthesia and provides much better visualization of the smaller peripheral airways. The introduction of laser technology into the tracheobronchial tree and the advent of airway stents in the early 1990s caused a resurgence of rigid bronchoscopy in the management of both benign and malignant central airway obstruction.[4–6]

Thoracoscopy began in 1908 with Jacobeus,[7] and was extensively used in the treatment of tuberculosis, for pneumothorax induction and lyses of adhesions. When effective treatment for TB was discovered, interest in this technique disappeared. With technical improvements during the 90s, thoracoscopy regained popularity for dealing with undiagnosed pleural effusion.

These techniques can be considered safe since they are widely used and the rate of complications is extremely low.[8–10] A recent retrospective analysis of 23.682 patients undergoing bronchoscopy over a period of 11 years showed a mortality rate of 0.013% with a complication rate of 0.739%.[9] Mortality from medical thoracoscopy ranges between 0.09 and 0.24%.[11] Despite these small numbers, complications do occur and in order to avoid them, the evaluation of the patient before and after any intervention, is of utmost importance. Considering that this issue is of major concern, it is surprising that there are very few up to date studies dealing with these areas, the evidence level remains low and most recommendations (European Respiratory Society, American Thoracic Society and national societies) are based on common sense and the very small number of evidence based publications.

Figure 1 Operating room and monitoring of vital signs.

The aim of this article is to address pre- and post evaluation workup of patients undergoing endoscopic techniques in order to determine the fitness of the patient and the ideal planning and strategy in order to obtain the maximum benefit with the lowest risk.

The issues discussed are the preparation of the patient and informed consent, the general assessment – medical history, current medications, physical examination, laboratory tests, radiological evaluation and analysis of the indication and planning. The post intervention evaluation will also be discussed, in order to detect and treat complications and decide on the guidance to be given to the patient after discharge.

Pre-operative assessment

Preparation and informed consent

The importance of relevant and comprehensible patient information before diagnostic and therapeutic procedures is increasingly recognized, and improves the patient's tolerance of the procedure.[12–14] There are several ways of helping patients, for example, careful explanation and relaxing music, have been found to calm patients and reduce anxiety.[15,16] Patients and their relatives may have questions about the procedure and later management and sufficient time should be made available for this. The clinician should be able to explain the procedure, its purpose, the associated risks and possible adverse outcomes and the patient should be able to give consent entirely voluntarily.

It is the responsibility of the doctor who performs the examination to ensure that a valid consent form has been signed. An intervention performed without consent may lead to legal proceedings.[17]

General assessment – history and physical examination

It is essential to have detailed information about the patient's current and past medical history for formulating diagnostic hypothesis and planning the examination. Relevant information should be obtained about smoking history, occupational exposure, and comorbidities such as asthma, COPD, cardiovascular status (myocardial infarction, arrhythmias, unstable angina, congestive heart failure), bleeding disorders (thrombocytopenia, immunossupression, uremia, impared liver function), allergies and medications (antiagregating agents, anticoagulant therapy).

Before any procedure, it is useful to know the basal physical characteristics of the patient. Monitoring of vital signs (heart rate, respiratory rate, blood pressure and O_2 saturation) is mandatory (Fig. 1). Visual assessment of the patient is required to detect signs of respiratory distress, superior vena cava syndrome, stridor, hoarseness, anatomic abnormalities of the face and neck (for example wounds, burns and fractures), and spine deformities that could preclude the performance of the examination. Lung auscultation to rule out asymmetries of breath sounds (atelectasis, pneumothorax), abnormal breath sounds (wheezing, crackles) enables the physician to understand whether they had existed previously or are a consequence of the procedure.