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Bronchoscopy

WHAT IS BRONCHOSCOPY?

Bronchoscopy is the term used for examination by direct vision of the lower respiratory tract. Two kinds of viewing instrument can be used: a flexible bronchoscope (introduced through the nose or mouth) or a rigid one, inserted through the mouth. Each has its own eye-pieces, lenses, and light source to illuminate the field of vision. Either procedure may be carried out in the operating room, in a special procedures room, in the patient's hospital room, or in a daycare facility. Local anesthesia is adequate for flexible bronchoscopy, but a general anesthetic is required for rigid bronchoscopy. Sometimes rigid bronchoscopy is incorporated into a more extensive examination of the air and food passages -- so-called panendoscopy.

WHY IS IT PERFORMED?

In ENT medicine, bronchoscopy is used to aid diagnosis of disease of or damage to the airway, including infection, tumor, foreign body, or injury. The tracheobronchial tree can be examined in detail, and, where necessary, tissue samples can be collected for laboratory analysis. Bronchoscopy may be recommended, therefore, whenever there are symptoms such as a lump in the neck, persistent cough, wheezing, hoarseness, breathlessness, blood in the sputum, or pain in the upper chest. Or it may be recommended if some abnormality is seen on X-ray. The bronchoscope can also be used for treatment. The rigid type especially is invaluable, for example, in relieving bronchial obstruction, due perhaps to a mucus plug, an inhaled foreign body (such as a peanut or piece of candy) or to a stricture (narrowing) of the airway. Also, in certain conditions, such as cancer, drugs and other therapeutic substances can be delivered to their target sites by way of the bronchoscope.

RISKS AND BENEFITS

Bronchoscopy quickly reveals the cause of a wide range of conditions without the need for an exploratory operation. For treatment, too, bronchoscopy is often more immediate and safer than surgery. Sometimes, it can be lifesaving. The risks of the procedure are low. They include: shock, hemorrhage, infection, and damage to the lining of the airway.

THE PROCEDURE:

PREPARING FOR BRONCHOSCOPY

You will be asked to come early on the day of the procedure, preferably accompanied by a friend or relative. You should take nothing by mouth for at least four hours beforehand. Dressed in a hospital gown, you may be given premedication an hour or so before the procedure is due to begin.

FLEXIBLE BRONCHOSCOPY

The bronchoscopist will work with you either sitting or lying on your back, possibly with your head shoulders raised. To help your breathing, you may be given oxygen during the procedure and for a while afterwards. A local anesthetic will be used. Most popular is the spray as you go method, whereby a local anesthetic is used to numb the nose, throat and bronchial passages as the bronchoscope is introduced. This sets up a tingling sensation at first, and an unpleasant taste in the back of the mouth. The equipment is lubricated and passed, usually by way of the nose, although sometimes it is inserted through the mouth. The flexible tip of the bronchoscope is the widest part, and once this has been passed into the back of the throat, the shaft follows easily. Now the bronchoscope is advanced slowly and gently, helped by swallowing. It helps, too, if you can keep your eyes open throughout the procedure. You can expect to cough, and perhaps feel shortness of breath, as the vocal cords are anesthetized; after a few minutes' wait, the tip of the instrument is passed between them. You should not try and talk or gasp for breath, and gradually you should get used to the sensation. Once the irritation has subsided, and you are breathing comfortably, the operator can continue to advance the bronchoscope, examining first one and then the other side of the bronchial tree. He or she uses the built-in suction apparatus during the examination to clear any secretions which may block the view. Sometimes a saline solution is used to wash out the bronchi (a technique known as bronchoalveolar lavage); this fluid is then suctioned back and the cells contained in it are sent for microscopic examination.

BRUSH BIOPSY

Or, in a technique known as brush biopsy, bronchial cells may be collected using a rotating brush at the tip of the bronchoscope. Small tissue specimens can also be obtained using cutting instruments. With the equipment in place, any therapeutic measures are carried out as part of the overall procedure. When the examination or treatment is complete, the bronchoscope is withdrawn.

AFTER THE PROCEDURE

You will be asked to rest for at least an hour or two, possibly longer, and your vital signs (temperature, pulse, blood pressure and respiration) will be checked at frequent intervals. The effects of the local anesthetic may linger for up to two hours, and you must not eat or drink during this time. Your nose and throat may feel sore and you may feel tired or faint. Your doctor will want to discuss the preliminary findings with you and check your recovery. Before you leave, you may be given an appointment for a further consultation (to discuss any laboratory results) or further treatment if necessary. You will be advised to go straight home and rest. In particular, you should not attempt to drive for at least 24 hours after bronchoscopy.

RIGID BRONCHOSCOPY

The bronchoscopist works with you lying, anesthetized, on your back, with the neck extended and a pad beneath the shoulder blades. Throughout the procedure, you are ventilated through a sidearm attachment on the bronchoscope. Inserted through the mouth, the bronchoscope is passed down into the trachea. A fine forward viewing telescope is then passed through the main instrument, and this can be advanced into the bronchi. At intervals suction apparatus is used to clear any secretions from the lungs that may block the view. If necessary, a

biopsy (tissue sample) can be taken using long biopsy forceps through the bronchoscope. Or, a built-in sucker may be used to retrieve a foreign object lodged in an airway. When the bronchoscope is withdrawn, an endotracheal (inside the trachea) tube is inserted to safeguard your breathing until the effects of the drugs wear off. After the procedure you will be nursed in a recovery area for a while. Supplementary oxygen may be given until your breathing is back to normal. You may feel sleepy and sore, and painkilling drugs may be prescribed. You will be given nothing to eat or drink until you are able to swallow freely. Events then are the same as for fiberoptic bronchoscopy.

POSSIBLE COMPLICATIONS

These may include difficulty in breathing, faintness, infection, and persistent bleeding. If you notice any untoward symptoms in the days following the procedure, you should call the doctor's office for advice.