RESPIRATORY AUSCULTATION: HOW TO USE A STETHOSCOPE

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This article outlines the correct procedure for respiratory assessments using a stethoscope, how to use a stethoscope and how to interpret your findings.

The role of the nurse has continued to evolve and tasks traditionally associated with the medical profession are increasingly being adopted by nursing staff. Competently utilising a stethoscope in clinical practice is one such skill. A fundamental ability to use a stethoscope comes with many nursing roles ranging from respiratory nurse specialist and outreach roles to intensive care nursing, A&E nursing and when practising in operating theatres.

Auscultation of the lungs should form part of the respiratory assessment as the stethoscope allows the practitioner to assess a patient’s cardiac, respiratory and intestinal state (O’Neill, 2003). Auscultation of the lungs should be carried out for baseline assessments, for patients in acute respiratory distress and for patients with known lung disease (Docherty, 2002).

Auscultation of the respiratory system fits within Hudak et al’s (1998) guidelines on conducting physical assessments:
- Inspection;
- Palpation;
- Auscultation;
- Percussion.
In order to conduct professional assessments the following rules need to be followed:
- Assess the area for safety;
- Introduce yourself to the patient, explain what you are about to do and why, and gain informed consent;
- Wash your hands, put on gloves and an apron;
- Position yourself and the patient optimally;
- Maintain the patient’s dignity;
- Ensure all required equipment is clean and ready to use;
- Optimise the environment.

Assess the area for safety

Issues related to personal safety in the acute setting require the same degree of attention as client assessment and management. The basic life support algorithm (Resuscitation Council UK, 2000) states that assessing areas for safety/danger is the first consideration when approaching patients.

Specifically in relation to stethoscope use there are documented incidents of healthcare workers being assaulted and experiencing attempted strangulation with stethoscope tubing (Keep and Gilbert, 1995). Placing stethoscopes around the neck, hanging loosely and freely, should be avoided. The personal safety of nursing staff should be a central priority when delivering direct care.

Introduction, consent and explanation

The NMC’s Code of Professional Conduct emphasises that before, for example, conducting respiratory auscultation, consent should be sought and explanations offered. This is not only a professional stipulation but also helps develop a positive therapeutic relationship. Consequently key requirement when using a stethoscope is an ability to demonstrate communication skills.

Infection control

Acute care patients are at significant risk of infection so the strictest infection control policies should be adhered to when conducting respiratory auscultation.

Positioning

Back injuries are an occupational hazard for the nursing profession. When conducting respiratory auscultation it is important that nursing staff position themselves optimally. Awkwardly bending or twisting over patients should be avoided.

Patient position is also extremely important. Patients should be placed in a comfortable position, either sitting upright leaning forward for cardiorespiratory assessments or lying supine or lateral for abdominal auscultation (O’Neill, 2003). In acute care the position will be influenced by the patient’s presentation and stability. Nursing staff also need to consider the length of time assessments take as, for example, leaning forward for prolonged periods of time can cause distress.

Maintaining dignity

Assessments involve careful patient preparation. Patients must be properly undressed for examination and chest pieces should not be placed over clothing. Emphasising patient dignity is a theme that should always be considered by health professionals; respiratory auscultation is no exception. Patients have their chests and backs exposed and consequently nurses must be sensitive to issues related to dignity. Respiratory auscultation will therefore require privacy.

Preparing equipment

Stethoscopes should be cleaned between use with different patients or by different members of staff. Nosocomial infections related to poor infection control policies

LEARNING OBJECTIVES

- Be aware of the stethoscope’s role in respiratory assessment
- Know the correct procedure for respiratory auscultation
- Understand how different lung sounds can be categorised
- Be aware of the need for systematic respiratory auscultation
GUIDED LEARNING

- Outline the correct procedure for carrying out an assessment
- Explain how a systematic respiratory auscultation should be performed
- Identify the groups of breath sounds that can be identified
- Know the different types of abnormal breath sounds

with stethoscopes are well documented (Panhotra et al, 2005). Staff using stethoscopes regularly may consider owning their own equipment as sharing equipment requires careful cleaning between staff, particularly of the ear-pieces.

Optimise the environment

Respiratory auscultation must be conducted in a quiet environment. Furthermore, nursing staff may wish to consider adjusting the level of beds or table heights, optimising lighting or generally ensuring the environment allows for a professional assessment to be conducted.

It should also be noted that stethoscopes are manufactured by a number of different companies. The data collected will therefore be influenced by the quality of the equipment available.

CONDUCTING THE ASSESSMENT

Once the above preparation criteria have been considered the healthcare professional will be in a position to effectively conduct the assessment. The diaphragm of the stethoscope should be used to auscultate breath sounds in the following systematic fashion. The assessor should try to visualise the underlying lobes of the lungs as the assessment takes place.

Posterior chest

- Auscultate from side to side and top to bottom, omitting the areas covered by the scapulae;
- Compare one side with the other looking for asymmetry;
- Note the location and quality of the sounds heard.

Anterior chest

- Auscultate from side to side and top to bottom;
- Compare one side with the other looking for asymmetry;
- Note the location and quality of the sounds heard.

Listening to bilateral air sounds and entry at the bronchus area (second intercostal space on either side of the sternum), and the apex of the lungs (fifth intercostal space in the region of the right and left axilla), the practitioner can be alerted to common and manageable problems or abnormalities (Docherty, 2002). When listening to the lungs the categories of findings include:

- Normal breath sounds;
- Decreased or absent breath sounds;
- Abnormal breath sounds.

Normal breath sounds are termed vesicular and have a rustling quality. The sounds rise from the turbulent airflow of the trachea and proximal bronchi and are transmitted through the chest, with high frequencies filtered out by atered alveoli (Ornadel, 2005). Tracheal breath sounds are heard over the trachea; bronchovesicular and bronchial sounds are heard in between.

Respiratory auscultation in a nursing context is more closely associated with distinguishing between normal and abnormal as opposed to actual diagnosis. Absent or decreased sounds are inaudible (absent) or reduced in volume (decreased) compared with other areas of the lungs when the lungs are examined with a stethoscope (O’Neill, 2003). Breath sounds are decreased when normal lung function is displaced by air (emphysema or pneumothorax) or fluid (pleural effusion); breath sounds shift from vesicular to bronchial when there is fluid in the lung itself.

Abnormal or adventitious (extra) lung sounds can be categorised as:

- Crackles – these are high pitched, discontinuous sounds similar to the sound produced by rubbing your hair between your fingers (also known as rales);
- Wheezes – these are generally high pitched and ‘musical’ in quality. Stridor, a high-pitched sound on inspiration, is indicative of laryngeal spasm or foreign body obstruction;
- Rhonchi – these often have a ‘snoring’ or ‘gurgling’ quality. Any extra sound that is not a crackle or a wheeze is probably rhonchi.

Nursing staff who are professionally supported and educated in respiratory auscultation have the advantage that their holistic patient assessment generates more data than patient inspection alone. Nurses who develop their ability to conduct such assessments will be more confident than those who don’t as they will base their conclusions on more data.

Advanced assessment techniques are difficult to both teach and learn. Both individuals and organisations need to adopt a collaborative, professional approach. Learning how to use a stethoscope is a skill that requires a close relationship between expert practitioners who use them regularly and less experienced colleagues who are developing their skills.

REFERENCES


