Use of a modified stethoscope to assess paediatric nasal airflow in suspected choanal atresia, nasal stents or nasopharyngeal airways

Katrina Mason, David Royan, Chris Pepper, Hamid Daya, Dan Tweedie, Evelina Children’s Hospital, London, UK

A stethoscope with the metal ‘bell’/‘drum’ removed can be used to assess nasal airflow in suspected choanal atresia, nasal stents and nasopharyngeal airways

This technique can be used as an adjunct to established techniques

This simple bed-side technique can be readily taught to nursing staff who manage these patients

Assessment of nasal airflow in suspected choanal atresia, or after insertion of NPAs or nasal stents is essential but can be challenging in clinical practice.

NPAs and nasal stents can become blocked. This can be suspected when there are signs of respiratory distress or through failure to pass a suction catheter.

It can be hard to confirm both blockage and restoration of nasal airflow.

Traditional techniques include observation of misting of a metal surface or mirror or movement of a wisp of cotton wool.

We present a simple, non-invasive bed-side technique to assess nasal airflow in cases of suspected choanal atresia, blocked nasal stents or nasopharyngeal airways.

STEPS

1. Obtain a low-cost stethoscope readily available from the ward
2. Remove the distal metal ‘bell’/‘drum’ to reveal the end of the tubing
3. Place eartips into the ears. Please note that the bell of the stethoscope should be removed before insertion of the eartips, as this will otherwise produce a very loud and uncomfortable sound!
4. Place the end of the tubing close to the patient’s nostril, stent or NPA, ensuring only one side is listened to at a time, and when the child is not distressed, to limit active airflow through the mouth.
5. Listen for nasal patency; this is clearly heard as flow of air with inspiration and expiration. Stents/NPAs which are partially blocked with mucus can have rougher sounds with pops or crackles.

Nasal patency is clearly heard as flow of air with inspirations and expiration. Stents/NPAs which are partially blocked with mucus can have rougher sounds with pops or crackles. Success in unblocking NPAs and stents can be assessed through listening for a change in the airflow sounds.