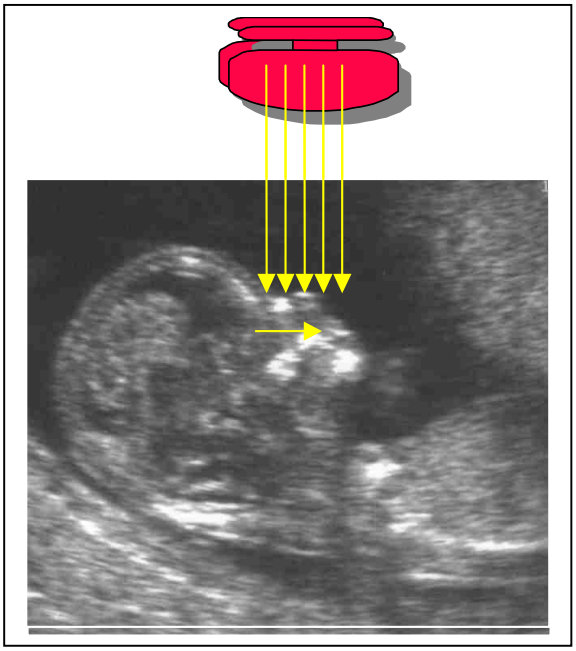
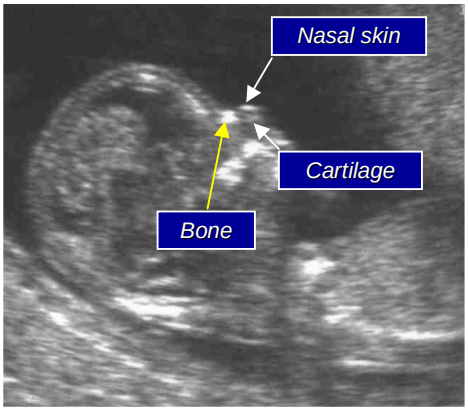
Protocol for the assessment of the fetal nasal bone

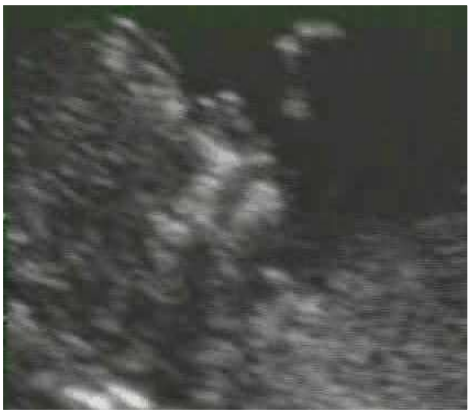
- The gestational period must be 11 to 13 weeks and six days.
- The magnification of the image should be such that the fetal head and thorax occupy the whole image.
- A mid-sagittal view of the face should be obtained. This is defined by the presence of the echogenic tip of the nose and rectangular shape of the palate anteriorly, the translucent diencephalon in the centre and the nuchal membrane posteriorly. Minor deviations from the exact midline plane would cause non-visualization of the tip of the nose and visibility of the zygomatic process of the maxilla.



- The ultrasound transducer should be held parallel to the direction of the nose and should be gently tilted from side to side to ensure that the nasal bone is seen separate from the nasal skin.
- The echogenicity of the nasal bone should be greater than the skin overlying it. In this respect, the correct view of the nasal bone should demonstrate three distinct lines: the first two lines, which are proximal to the forehead, are horizontal and parallel to each other, resembling an "equal sign =". The top line represents the skin and bottom one, which is thicker and more echogenic than the overlying skin, represents the nasal bone. A third line, almost in continuity with the skin, but at a higher level, represents the tip of the nose.



- When the nasal bone line appears as a thin line, less echogenic than the overlying skin, it suggests that the nasal bone is not yet ossified, and it is therefore classified as being absent.



Clinical application of findings from assessment of the nasal bone

The incidence of an absent nasal bone is related to NT, CRL and ethnic origin as well as aneuploidy, being more common when the NT is high, the CRL is low and the mother is Black. Therefore, it is not possible to give simple numbers by which the presence of the nasal bone will reduce the risk for trisomy 21 and the absence will increase the risk.

The FMF software firstly calculates a risk based on maternal age, fetal NT and maternal serum free β-hCG and PAPP-A. If the risk is more than 1 in 50 and the nasal bone is normal the risk does not change. If the risk is 1 in 50 to 1 in 1,000 and the nasal bone is normal the risk is usually reduced. If the nasal bone is absent the risk is always increased. The difficulty is when the gestation is 11 weeks or the beginning of the 12th week and the nasal bone is absent but the NT, the other ultrasound markers and the serum biochemistry are normal. In this case our advice is that the patients are rescanned in one week and action is only taken at that point if there is persistence of the absence of the nasal bone.