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Foetal esophagus scans screening: what's about the distance between trachea and aorta versus the pouch sign?

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Objective: Antenatal diagnostic of esophagus' pathology is often missed because based on indirect signs (hydrops, small stomach). A sensible improvement occurs with the "pouch sign" due to the filling of the blind oesophagus's upper part, pathognomonic of upper atresia.
We defined a referent scan to visualize tracheo-aorta's space containing normal oesophagus, becoming very thin or large in pathology.
We evaluated the place of each of these signs in oesophagus's pathology at the light of their value in normal situation.
Method: After more than 10 000 measurement of this space with our referent scan, we compared in 6 esophagus atresia (with and without fistula) the pouch sign to our referent scan: facility to get the sign, and the information given by each sign.
Results: Pouch sign was very difficult to obtain because of the intermittent filling of the upper part of the oesophagus combined with fetal's movements increased by hydrops, needing a lot of time.
The evaluation of tracheo-aortic distance was possible in all cases with pathology, generally easily (90% less than 30 sec in our 10000 normal cases).
Pouch sign is pathognomonic of the esophagus upper part atresia, absent in normal, but also missed filling and upper part fistula, so it's absence can't eliminate an atresia.
Space was always very thin in atresia (with fistula or not), or very increased in tubular duplications. On the contrary to pouch sign, a normal tracheal aortic space is highly suspect of normal oesophagus.
Conclusion: Pouch sign's visualisation is pathognomonic of upper esophagus atresia, but is very difficult to obtain, and its absence doesn't mean no atresia.
On the contrary, the measure of the tracheo-aorta's space is a much easier and reliable sign in normal and pathologic esophagus, and could be done in routine or in low risks as hydrops, especially when the stomach is poorly or not seen. A new CFEF's study demonstrate its feasibility and reliability.