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Early detection of isolated coarctation of the aorta – still a challenging task.

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Objectives:

Newborns with coarctation of the aorta (CoA) are at a particular risk of being discharged from newborn nurseries without a diagnosis. These neonates often have a normal routine physical examination before closure of the arterial duct.

We aimed to identify symptoms and signs that led to the diagnosis and to determine to what degree prenatal screening and neonatal pulse oximetry screening contribute to the diagnosis.

Methods

Data were reviewed retrospectively for infants with isolated CoA, born between January 2003 and December 2012 in our referral area for cardiac surgery, who either died before surgery or underwent repair of CoA before 2 months of age. Cases were identified from our surgical files and from the causes of death registry (National Board of Health and Welfare). Data on clinical presentation, diagnosis, management and outcome were collected from hospital charts.

Results

Eighty-eight infants fulfilled inclusion criteria. Five neonates died before coming to surgery. The remaining 83 infants were diagnosed at a median age of 5,6 days (0-51). Only 2 were detected prenatally and 4 of 19, who were born in units using pulse oximetry screening, had a positive screen. Forty-two presented with a systolic murmur with (18) or without (24) weak femoral pulses. Eleven had weak femoral pulses but no murmur. Forty-six (55%) were discharged without a diagnosis, and 7 of them underwent echocardiography (normal in all) before discharge. Twenty-two of the discharged neonates (48%) were in circulatory shock on re-admission. Two babies died after surgery, but CoA was probably not the primary cause of death.

Conclusions:

We showed that CoA is still rarely diagnosed prenatally and is also usually not detected by pulse oximetry screening. In addition neonatal routine physical examination also fails to diagnose a substantial proportion of children with CoA.

Early diagnosis depends on careful palpation of femoral pulses and wide indications for echocardiography. However, even echocardiography sometimes fails to diagnose CoA, or the obstruction has not yet developed.