



## Use of Radiograph As Screening Tool To Diagnose Congenital Cardiac Disease

### KEYWORDS

Congenital heart disease, New born child, Radiograph Chest.

### Dr Kedar Athawale

Lecturer, Dept of Radiodiagnosis and Imaging, B K L Walawalkar Rural, Medical College & Hospital, Shreekshetra Dervan, Ratnagiri, Chiplun, Maharashtra 415606.

**ABSTRACT** *In twenty-first century medical science is advancing rapidly. It has helped to diagnose and treat nearly all the diseases making human to live a long and healthy life. Congenital heart disease is difficult to diagnose in womb*

*due to many reasons like lack of expertise and lack of high end machines at all the diagnostic centers. Radiograph obtaining facility is available easily and hence can be used to diagnose congenital heart disease in a new born child thus helping quick intervention.*

### INTRODUCTION

Congenital heart disease is one of the leading causes of morbidity and mortality in human. Many of these go unnoticed in early years. If diagnosed early intervention can be arranged helping the patient to live a quality life. Even in the advanced technology era the diagnostic tools like ultrasound machines are not available at rural regions. There is lack of expertise too which is needed to handle such machines. However radiographic facility is available though-out India including most rural regions. This study is intended to find out sensitivity and specificity of the radiographic evaluation of chest to diagnose congenital heart diseases in new born.

We screened 1000 new born babies with chest radiograph AP view. These babies were normal on antenatal ultrasound study. Incidence of congenital heart disease varies with different studies. It is 2 to 8 per 1000. [1, 2]

### MATERIALS AND METHODS

We screened 1000 new born babies over the period of 30 months with a chest radiograph AP view. The inclusion criteria were to include babies who were normal on antenatal ultrasound or were not scanned on ultrasound. We took radiographs within one month of delivery of the baby.

### RESULTS AND DISCUSSION

Out of 3000 babies we found four abnormal chest radiographs. These were advised to get a 2D echo scan which came abnormal in all the four babies. Two of the babies with normal chest radiograph developed cough and breathlessness after 4 months. These were subjected to 2D echo examination and were found out to have congenital heart disease.

#### The abnormal chest radiographs were:

1. This baby had fever and cough. Chest radiograph typically showed 'Snowman's heart'. Cardiomegaly was noted with bulging of right heart border and rounded left heart border. Obliteration of left costophrenic angle was seen. Impression formed was enlarged right atrium and ventricles with superior mediastinal lesion

likely prominent vessels. Total anomalous pulmonary venous drainage {TAPVD} was made. 2D echo was ordered and diagnosis of supracardiac total anomalous pulmonary venous drainage was confirmed {See image 1}

2. This baby had difficulty in feeding and felt breathlessness. Chest radiograph showed typical 'Egg on side' appearance.[3,4,5] Rounded left heart border was noted. Impression formed was enlarged right ventricle. 2D echo made a diagnosis of transposition of great arteries with atrial septal defect {See image 2}.

3. This baby had irregular heart rate and breathlessness. Chest radiograph showed typical 'Boot shaped heart'[3,4,5,6,7] Rounded left heart border was noted with prominent pulmonary bay and oligemic lungs. Impression of Fallot's tetralogy was confirmed on 2D echo {See image 3}.

4. This baby presented with cough and cyanotic spells on feeding. Chest radiograph showed typical 'Sitting duck appearance' Rounded left heart border was noted with bulging right heart border. Over circulation of lung fields was noted as well. Impression of Persistent truncus arteriosus was confirmed on 2D echo {See image 4}.

### CONCLUSION :

We concluded that screening of new born baby helps to diagnose a congenital heart disease element early and thus help in early diagnosis and treatment so as to help the child to lead a quality life ahead. Even though the sensitivity and specificity of the chest radiograph is less it is definitely helpful at rural places which lag in technologically advanced diagnostic units and expertise.

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IMAGE 1:



IMAGE 2:



IMAGE 3:

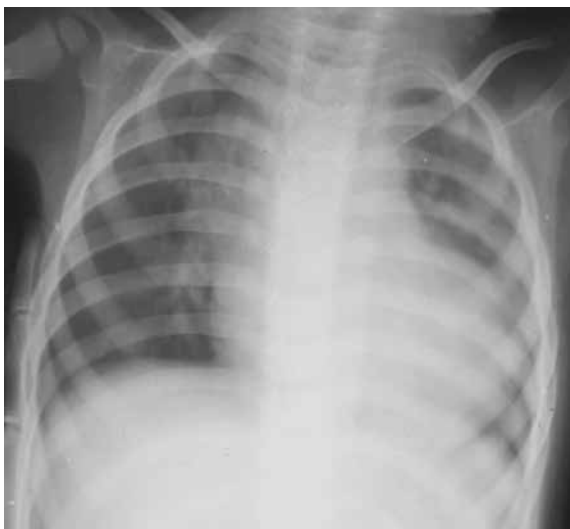


IMAGE 4:



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