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Ayurveda

AN AYURVEDIC APPROACH TO NO OPTION COMPLEX CYANOTIC CONGENITAL HEART DISEASE (CHD) –A SINGLE CASE STUDY.

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ABSTRACT Congenital heart disease (CHD) includes a variety of structural and functional malformations of the heart and blood vessels present since birth. It is the most frequent form of congenital birth defect and estimated a prevalence of 9/1000 live births.Here is a single case study of 17 year old female patient, presented with shortness of breath, extreme tiredness, bluish discoloration of lips, tongue and finger tips. Diagnosis of complex congenital cyanotic heart disease was already done by echocardiographic evaluation and chest x-ray. The patient underwent the only possible palliative measure i.e. blalock-thomas-taussigs shunt and unfortunately failed due to pulmonary hypertension. As per the principles of Ayurveda, development of foetus depends on the excellence of sperm, ovum, uterus and timings of sexual union. The inherent defects present in this case can be included under sahaja hridroga. Therapeutic formulations having deepana, pachana and rasayana properties were given and clinically assessed by using NYHA functional classification. Ayurvedic approach in a single case of CHD is useful to improve the health related quality of life (HQoL) and prevent complications by correcting inherent agnimandhya at dhatu and koshta level.

KEYWORDS : Congenital Heart Disease, Sahaja Hridroga, Ayurveda, Health Related Quality Of Life (HQoL), Rasayana

INTRODUCTION:

Congenital heart disease (CHD) is an umbrella term representing diverse spectrum of cardiac malformations [1]. The estimated prevalence rate (9/1000) of CHD in India, creates a dreadful challenge within the families, society and health care system [2]. Children and adults with complex defects present a unique challenge, because there are no large, prospective, randomized trials conducted to assess the success rate of ICD implant for primary prevention of sudden death [3]. Heart defects can roughly be classified into left to right shunt lesions, cyanotic lesions, obstructive lesions and complex lesions[4]. 10-15% of structural and functional defects do not require correction, 70-80% needs interventional catheterization techniques. In early infancy with heart defects, definitive therapeutic procedures are regularly practiced to avoid long term complications resulting from the hemodynamic burden or from chronic cyanosis. The adverse effect of congenital cardiac defects on the affected case depends on the type and severity of the anomaly, as well as the timing and success of the therapeutic measures. In some complex inherent defects, palliative measures are the only possible option. For confirmation of CHD, non-invasive procedures such as Echocardiography and cardiac magnetic resonance imaging (MRI) are commonly used. A pocket of fluid in the back of the embryo's neck (i.e. thickness at the nuchal translucency) evident in ultra-sonogram between 10 and 14 weeks of pregnancy, also indicates a cardiac defect [5].

Diagnosis and management of cardiovascular diseases in Ayurveda is an unexplored area, since we lack emergency and critical care. Most of our Ayurveda fraternity and patients consider our science as a secondary option for the management to deal with such conditions. Extensive literature is available in Ayurvedic science regarding aetiology, *samprapti*, general and specific symptoms along with management [6-10]. Congenital heart defects can be included under *sahaja hridroga* originating from maternal part [11]. *Rasa vaha srothas and pranavaha srothas* are mainly involved in *hridroga samprapti*. In addition to this, inherent *dhatwagni mandhya* (due to *beeja avayava dushti*) plays a major role in the manifestation of symptoms. Ayurvedic formulations having *deepana, pachana, balya and rasayana* properties are beneficial and give promising results to alleviate the symptoms associated with CHD, where conventional interventional procedures fail. Ayurveda can offer a long term improvement in the health related quality of life in complex cardiac defects by incorporating the treatment principles of *hridroga, hridgata vata* [12], *Swasa roga* [13] *and rasayana chikitsa* [14].

CASE REPORT:

A 17 year old female, diagnosed case of cardiac problem, was admitted in Kayachikitsa Ward at Govt. Ayurveda College Hospital, Kannur, with complaints of shortness of breath, extreme tiredness, and bluish discolouration over lips, tongue and finger tips, decreased appetite, and poor weight gain appropriate to age.

The patient was born to non-consanguineous parents, through full term normal delivery. No antenatal exposures and birth weight was 2.57kg. Developmental milestones were delayed with incomplete immunisation status. Due to cyanotic spells, feeding difficulty and continuous cry baby was shifted to NICU and diagnosed as a case of congenital heart disease with failure to thrive. Since then she was under conventional medications but distress persisted as orthopnoea and exertional dyspnoea. At the age of 11 months, diagnosed as a case of situs inversus with levocardia, double outlet right ventricle(DORV), severe pulmonary stenosis, large ventricular septal defects, patent ductus arteriosus(PDA), severe tricuspid regurgitation(TR) by echo cardio graphic evaluation.

Based on the aim of treatment, Interventional techniques may be categorized as palliative, reparative or corrective procedures. In some inherent defects, palliative measures help to improve the functional irregularities by improving the circulation to some extent. As per the expert opinion in the field of cardiology interventional procedures are not suitable in this condition and a palliative procedure to improve the pulmonary circulation i.e. “blalock- taussigs shunt”was suggested. Unfortunately the palliative procedures failed in this case due to pulmonary artery hypertension and continued the oral medications for symptomatic improvement till 2013. According to the patient, there is no remarkable improvement in the cyanotic spells, exertional dyspnoea etc. with medications and discontinued all conventional measures against medical advice.

Patient had regular bowel and bladder habits. Appetite was very poor and sleep was disturbed due to orthopnoea and dyspnoea. Even though secondary sexual characters were present, menarche was not attained.

On General and physical examination, an emaciated patient with heart rate-96 /min; pulse-98/min; respiratory rate-33/min. extremities were cold to touch, pallor, clubbing (grade II), cyanosis (both central and peripheral) and oedema (pitting) were present.

ON CARDIOVASCULAR EXAMINATION:

INSPECTION:

chest-pectus arcuatum, precordial bulge and apex beat were present, Palpation: apex beat palpable below xiphisternum (hyper dynamic), pulse (radial)-irregular, reduced volume with radio femoral delay, Percussion: upper boarder-dullness at second intercostal space right from sternum to midclavicular line;right boarder- second intercostal space to fifth intercostal space along midclavicular line; left boarder-second intercostal space just lateral to left border of sternum till fifth intercostal space along left midclavicular line. On auscultation S1, S2 heard in all 4 areas, systolic murmur heard over the area near xiphisternum and fifth intercostal space over right midclavicular line.

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***INVESTIGATIONS*:**
Colour Doppler echocardiography revealed situs inversus with levocardia, DORV, severe pulmonary stenosis, large ventricular septal defects, PDA, severe TR and mild mitral regurgitation. Radiographic evaluation of the chest (PA view) shows > 50% Cardio thoracic ratio, indicates gross cardiomegaly(Figure 1 chest x-ray).

TREATMENT PROTOCOL:
Hridaya is embryonically developed from *prasada bhaga of rakta and kapha*[15].From the *Samprapti ghatakas*, it is evident that *hridroga* is a *vata* predominant disease occurring in *kapha sthana. Hridroga chikitsa* can be classified mainly in to *santharpana chikitsa* and *apatharpana chikitsa*. *Santharpana chikitsa* mainly indicated for *vatika hridroga* in *nirama* stage. Clinical features presented by the patient were very similar to the lakshanas of *vatika hridroga*. Since there is an inherent *dhatwagni* and *jataragni mandhya*, we can adopt *brumhana chikitsa* explained in *vatika hridroga* after correcting *agni mandhya* and improving digestion at appropriate level. The cardinal features of *Pranavaha srotho dushti lakshanas* like *swasa forms* a prominent lakshana in most of the hridroga, *samana chikitsa* in the form of *brumhana* therapy and *rasayana chikitsa* were effective. According to *Charaka*, diet and medicines should be selected such that they are very congenial to heart. Initially internal medications started with *dasamoola kaduthraya kwatha and thaleesa patradi choornam* having therapeutic indication of hridroga, aiming ama pachana and *agni deepana were given.* Following this, *balajeerakadi kwatha, chyavanaprasa rasayana* were given. Scheduled management followed here are enlisted in table no.1.

I. 1. Table. No.1: Management Schedule

S.NO	Treatment	Drug of choice	Duration
1.	Deepana, Pachana and Anulomana	A.Dasamoola kaduthraya kwatha [17] - 90ml bid B. Thaleesa patradi choorna[18]-5gm bid C. Tab.Dhanwantharam [19]-1b.i.d with Jeeraka kwatha	12 days
2.	Therapeutic combinations for Samana of lakshanas	A. Balajeeraka kwatha [20]-90ml bid B.Sthira ksheera kwatha [21]-30ml bedtime C. Abhyanga with Dhanwanthara thylam [22]-7days	8 days
3.	Rasayana,balya and hridhya	Chyavanaprasa rasayanam [23]-15gm bid	22 days
		Partharishtam [24]-20ml after lunch	
		Maharasnadi kwatha [25]-90ml at 5pm	

ASSESSMENT CRITERIA:
The parameters considered for analysing the effectiveness of Ayurveda management were cyanosis, dyspnoea, walking distance and quality of murmur. Dyspnoea, fatigue and palpitation were assessed based on the NYHA functional classification before and after the management during a time period of 30 days. (Table No: 2)

I. 2.Table.No 2:Assessment before, during and after management

Symptoms	Before treatment	After treatment (after 30 days)
Dyspnoea, fatigue and palpitation	NYHA class IV	NYHA class II
Walking distance	Few metres only on plane surface	>500metres including stairs and slopes
Murmur	Grade III	Grade II
Appetite	poor	Improved

DISCUSSION
Cardiac defects are most common of all congenital abnormality with complex aetiology and are poorly understood. In 85-90% of cases, there is no identifiable cause. Genetic factors can be identified in less than 1% of cases, generally caused by multi factorial inheritance presenting with features of heart failure, cyanosis, pulmonary hypertension and failure to thrive.

Considering structural impairment in cardiovascular system, the cause can be '*beeja-upathapa'*categorized under *sahaja vyadhi* without any relevant *poorva roopas*. If the part of the sperm or ovum which is responsible for the formation of a particular organ is vitiated, it results in the vitiation of the respective organ. Wholesomeness (*satmyata*) is also considered to be responsible for the proper development of foetus. Considering all the basics related with the development of *hridaya, apathya* and *asatmya* factors practiced by mother directly influence the development of any type of inherent defects. Vitiation of *srotases* such *as rasavaha, raktavaha* and *pranavaha* also take part in the *samprapti* and *samprapti ghatakas*.

Doshas involved- vata predominant thridosha kopa; dushya- rasa, *rakta* and *mamsa*; *rogabala - pravara* and *rogibala- avara*; *jarana sakthi* and *abhyavaharana sakthi-avaram*; *prakriti- vata pitta*

Vyana vayu located in *hridaya* is responsible for *rasa tharpana*. Prominent *rasakshaya* features present in this case indicates the improper formation of subsequent *dhatus* due to inherent *agnimandhya* in *koshta* and *dhatu* level. *Kapha dosha* is originated from and nourished by *rasa dhatu*, hence *kshaya of rasadhatu* and *kapha dosha* leads to the manifestation of *vatika hrudroga lakshanas*. Clinical features such as *akasmath deenatha*, *soka*, *sabdhahishnutha*, *swasavarodha*, *alpa nidratha* were evident in this patient which can be correlated with symptoms of *vatika hridroga* explained in *Ashtanga hridaya nidana sthana*. *Samanya lakshanas* and *Upadravas of hridroga* such as *sadam*, *sosham*, *syavatha* (cyanosis) and *uttarothara dhatu kshaya lakshanas* are also present in this case. This samprapti justifies the importance of *vata samana, balya* and *rasayana* drugs in the management.

CONCLUSION
Since it is a complex defect classified under *sahaja hridroga*, all conventional procedures (both interventional and palliative) are not possible. The main aim of management was to improve the health-related quality of life (HRQoL) of the patient, which has become an important assessment criteria in evaluations of health interventions. All the clinical features presented by the patient were very similar to *vatika hrudroga lakshanas* explained in the classical texts of *Ayurveda. Hridaya* is the *moolasthana of rasa vaha*, and *pranavaha srotas*. Here we can adopt the treatment principles explained *in swasa roga*, *vatika hrudroga, hridgata vata*. In addition to this all the therapeutic combinations having *deepana, pachana, anulomana and rasayana* properties are useful and effective in this case. According to modern science, cardiac defects may occur due to inadequate nutrient intake, insufficient nutrient absorption and increased energy needs which limit the ability of the patient to grow and develop. Hence there is a definite role in the correction of *Agni* at *koshta* and *dhatu* level. Comprehensive *Ayurvedic* approach including customized diet, exercise and medications explained in classics can provide a remarkable improvement; in the health related quality of life in congenital heart disease cases with no successful interventional procedures.

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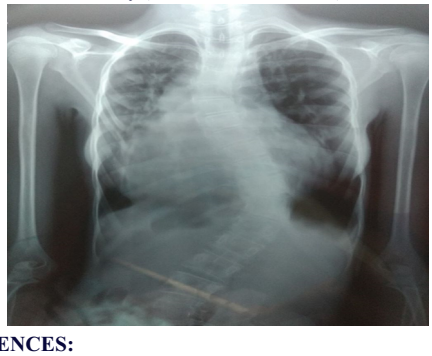
Conflicts of interest: None declared.

II.1. figure.1-chest x-ray (Attachment enclosed)



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