Original Article

Case Report on Congenital Heart Disease with Miliary Tuberculosis

Samiksha Tamgadge[1], Sheetal Sakharkar[2], Roshan Umate[3]

[1]Final year Basic Bsc student Smt. Radhikabai Meghe Memorial College of Nursing Sawangi Meghe Wardha.

[2]Associate professor, Smt. Radhikabai Meghe Memorial College of Nursing Sawangi Meghe Wardha.

[3]Research Scientist, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences, Sawangi, Wardha, Maharashtra.

Abstract

Background: Miliary tuberculosis is the widespread dissemination of Mycobacterium tuberculosis. It is the result of hematogenous dissemination and is characterized by extensive miliary mottling of lungs and involvement of the spleen, liver, and other tissues. It may be found as pulmonary type or septicemic type or meningitic type. Coarctation of the Aorta is a distinct narrowing or long segment hypoplasia of the aortic arch, usually distal to the subclavian artery. The narrow aortic lumen may exist as preductal or postductal obstruction which depends upon the position of the obstruction about the ductus arteriosus. The lesion obstructs blood flow through the aorta, resulting in increased pressure and effort of the left ventricle. Patient presentation: We are presenting an 8-year-old male child who visited the pediatric outpatient unit with the symptoms of fever, cough, and increased work of breathing, he was admitted to PICU. He was a known case of congenital heart disease. He was diagnosed to have congenital heart disease at the age of 3 years when he was admitted to the hospital due to the bluish coloration of his palms and soles. He had a fever (100 degrees F), cough, and increased work of breathing for 15 days during normal daily activities. The patient had undergone a 2-D Echo showing a parachute mitral valve. He was treated with antibiotics and maintained saturation on O2 by CPAP. Symptoms such as Respiratory distress and cough are relieved after maintaining saturation O2 and medications. Conclusion: Coarctation of the Aorta is typically present at birth (congenital heart defect). Mild to severe symptoms are possible. The illness might not be discovered until an adult. Coarctation of the Aorta frequently coexists with other congenital cardiac abnormalities. There are different methods employed for the treatment of CoA in adults, including surgical or percutaneous balloon angioplasty with or without stent placement, and medical therapy. Miliary Tuberculosis is one type of tuberculosis. This condition is rare in people with a normal immune system. It's more common in people whose immune system isn't working right. This is called being immunocompromised. Often your lungs, bone marrow, and liver are affected by miliary TB, but it can also spread to the lining of your heart, your spinal cord and brain, and other parts of your body. Treatment strategies in a patient with Miliary tuberculosis require the same treatment as Tuberculosis (Antibiotics).

Keywords: Miliary Tuberculosis, Coarctation of Aorta, Tachycardia.

Introduction

Coarctation of the Aorta is a congenital cardiac disease, Coarctation of the aorta (CoA) is a cardiac condition that obstructs the aorta's blood flow. Any location in the thoracic and abdominal aorta can experience CoA. The most typical position for CoA is where the ductus arteriosus joins the aorta, just distal to the left subclavian artery. (1) Eight cases of CHD are thought to be born out of every 1,000 live births worldwide [8].

Four per 10,000 live births is the estimated incidence of CoA, which accounts for 6-8% of all CHD [9]. Males are more likely to develop it than females. CoA is frequently linked to extra- and extra-cardiac abnormalities.

Address for correspondence: Samiksha Tamgadge
Final year Basic Bsc student Smt. Radhikabai Meghe Memorial College of Nursing Sawangi Meghe Wardha.

Access this article online

Quick Response Code:

Website: www.pnrjournal.com

DOI: 10.47750/pnr.2022.13.03.164

How to cite this article: Samiksha Tamgadge, Sheetal Sakharkar, Roshan Umate, Case Report on Congenital Heart Disease with Miliary Tuberculosis, J PHARM NEGATIVE RESULTS 2022;13: 1038-1041.

Some of the common related cardiac anomalies include the bicuspid aortic valve, ventricular septal defect, patent ductus arteriosus, transposition of the major arteries, etc.(2)

Infection with microbial tuberculosis in children continues to be a serious health issue in underdeveloped nations. To describe the clinical characteristics of the illness, symptoms, lab results, concomitant infections, and prognoses of the 23 children with miliary TB. (3) The rate of undiagnosed cases has grown, the frequency of miliary tuberculosis cases has reduced, and the mean age of patients with the disease has increased over the previous 20 years. Although the clinical picture is vague, headache and abdominal pain point to meningeal and peritoneal involvement. (4)

Case presentation

We are presenting an 8-year-old male child who visited the pediatric outpatient unit with the symptoms of fever, cough, and increased work of breathing, which was further diagnosed as Miliary tuberculosis after further investigation. The patient was weak and dizzy when admitted to PICU. The O2 saturation was continuously maintained.

As narrated by the patient he had difficulty in breathing, cough, and fever for 15 days. The fever was not continued. The temperature rises in the evening time. Also, when he was 3 years old, he was diagnosed with congenital heart disease, but it was mild at that time.

On physical examination, everything was normal except while auscultation murmur sound was present. The clinical examination was taken. On laboratory examination, the blood test shows 10.7% gm Hb, increased TLC count to 29,800, increased Platelet count to 6.23 Lakh, increased CRP to 181, and 2-D Echo reveals Aorta and Arch positive, and the physician diagnosed congenital heart disease with Miliary Tuberculosis. He is a weak child.

He was treated with CPAP at 5 liter/min, Intravenous fluid Normal Saline, and Inj. Ceftriaxone 800 mg IV 12 hourly, Inj. Vancomycin 320 mg in 30 ml NS over 1 hr 6 hrly, Inj. Pan 20 mg IV 24 hourly, Inj. Lasix 8 mg in 5 ml NS over 15 min IV 12 hourly. Symptoms such as fever and increased work of breathing are relieved after administration of O2 and medications. After treatment, the patient's condition improves. Symptoms such as fever, breathing difficulty, and cough are relieved after medications and oxygen administration.

Discussion

CoA was viewed as a straightforward congenital anomaly with a surgical remedy. Long-term monitoring has revealed that many patients with corrected CoA have significant morbidity and early mortality. It is now evident that CoA is more complicated than a simple anatomical narrowing that can be treated with surgery or percutaneous dilatation. Instead, CoA is a diffuse arteriopathy that manifests as hypertension, early cardiovascular disease, and aneurysmal disease due to extensive disturbance in arterial structure and function. Oxygen administration is given by CPAP to relieve breathing difficulty and Antitubercle is given to relieve cough. (5-15)

Fever was present in 17 cases, rales were present in 14, weight loss and appetite loss were present in 10 cases, and hepatosplenomegaly was present in 9 cases. Two instances had previously contracted the measles, and one of the patients had facial paralysis. There was also tuberculous meningitis in seven patients. Overall, the result was positive, but two cases did have fatalities. (16-21)

In 60% of cases with pulmonary TB and congenital heart defects throughout the 6-year research, cardiac surgery had to be postponed so that antituberculosis therapy could be finished. Patients with acyanotic and cyanotic high-flow lesions, as well as those with pulmonary stenosis, should be treated by doctors with a high index of suspicion for the development of pulmonary tuberculosis. (22-31)

Rana Olguntürk, F.Sedef Tunaoğlu, Levent Gökgöz, Leyla Memiş, and Serdar Kula et al reported after seeing clinical improvement, the patient had surgery. The tricuspid valve underwent ringplasty, and the atrial septal defect was repaired. Due to respiratory failure, he was unable to be extubated after the procedure. He experienced hypotension and a pneumothorax seven days after the operation, at which point he passed away. An autopsy revealed bilateral widespread pulmonary tuberculosis. This report seeks to highlight the link between congenital cardiac disease and tuberculosis. (32-37)

Conclusion

Coarctation Aorta, also known as coarctation of the aorta, is a congenital disorder in which the aorta is constricted, typically where the ductus arteriosus (ligament arteriosum following regression) enters. "Pressing or drawing together; narrowing" is what the word "coarctation" signifies. The aortic arch is where coarctations are most frequent. Treatment strategies in a patient with Coarctation of the Aorta require O2 administration and antibiotics to improve the condition. A type of tuberculosis called miliary tuberculosis develops when Mycobacterium tuberculosis invades extrapulmonary organs like the liver, spleen, and kidneys. The process by which the germs travel from the pulmonary system to the lymphatic system and ultimately the bloodstream is well known, but it is not clear. Different strategies haven't produced a pleasing outcome for our patients yet.

References

1- Doshi AR, Chikkabyrappa S. Coarctation of Aorta in Children. Cureus [Internet]. 2018 Dec 5 [cited 2022 Aug 21];10(12). Available from: https://www.cureus.com/articles/16533-coarctation-of-aorta-in-children

2- Campbell M. Natural history of coarctation of the aorta. Heart. 1970 Sep 1;32(5):633–40.
3- Fuat Gurkan MB Bunyamin Dikici, Vuslat Bosnak, Ahmet Yaramis, M Ali Tas, Kenan Haspolat. Miliary Tuberculosis in Children: A Clinical Review. Scand J Infect Dis. 1998 Jan 1;30(4):359–62.
4- Sahn SA, Neff TA. Miliary tuberculosis. Am J Med. 1974 Apr 1;56(4):495–505.
5- Krieger E, Stout K. The adult with repaired coarctation of the aorta. Heart. 2010 Oct 15;96(20):1676–81.
6- Fuat Gurkan MB Bunyamin Dikici, Vuslat Bosnak, Ahmet Yaramis, M Ali Tas, Kenan Haspolat. Miliary Tuberculosis in Children: A Clinical Review. Scand J Infect Dis. 1998 Jan 1;30(4):359–62.
7- van der Merwe PL, Kalis N, Schaaf HS, Nel EH, Gie RP. Risk of pulmonary tuberculosis in children with congenital heart disease. Pediatr Cardiol. 1995 Jul 1;16(4):172–5.
8- Olguntürk R, Tunaoğlu FS, Gökgöz L, Memiş L, Kula S. Congenital heart disease and pulmonary tuberculosis. Open Med. 2010 Apr 1;5(2):172–5.
9- Deshmukh, Sourabh G., Trupti Thakre, Jaya Gupta, and Rohit Waskar. "A Case Study on Management of Tinea Cruris with Classical Vaman Karma." Journal of Pharmaceutical Research International, June 30, 2021, 195–202. https://doi.org/10.9734/jpri/2021/v33i33B31811.
10- Deshpande, Meghana Ajay, Sudhindra Baliga, Nilima Thosar, Nilesh Rathi, Shriramji Jyothishi, Pranjali Vilas Deulkar, and Sphurti Pramod Bane. "Evaluation of Antibacterial Efficacy of Triphala Toothwipes on Oral Streptococcus Mutans Count in Intellectually Disabled Children." Special Care in Dentistry 41, no. 5 (September 2021): 619–25. https://doi.org/10.1111/scd.12597.
11- Deshpande, Shilpa Bhaskarrao, Shweta Parwe, and Milind Nisargandha. "Role of Argwadha Nitya Virechana in Madhumeha (Diabetes Mellitus-II): A Case Study." Journal of Pharmaceutical Research International, June 26, 2021, 170–76. https://doi.org/10.9734/jpri/2021/v33i33B31808.
12- Devi, Akoijam Nisha. "Overview of COVID-19 Pandemic: Transmission, Epidemiology and Diagnosis." Journal of Pharmaceutical Research International, July 23, 2021, 174–81. https://doi.org/10.9734/jpri/2021/v33i38A32073.
13- Devi, M. Shavina. "Dietary and Immunomodulatory Measures for Boosting Immunity to Fight Covid-19." Bioscience Biotechnology Research Communications 14, no. 6 (June 15, 2021): 180–85. https://doi.org/10.21786/bbrc/14.6.39.
14- Devkumar, Shreerag, Rakesh Kumar Jha, and Dhruba Hari Chandi. "Long Term Effect of COVID-19 on the Brain: Review." Journal of Pharmaceutical Research International, July 31, 2021, 1–4. https://doi.org/10.9734/jpri/2021/v33i39B32173.
15- Dhage, Prasad. "Rehabilitation of Tennis Elbow (Lateral Epicondylitis) with Physical Therapy: A Case Report." Bioscience Biotechnology Research Communications 14, no. 6 (June 15, 2021): 81–83. https://doi.org/10.21786/bbrc/14.6.19.
16- Dhande, Rajasbala Pradeep, Shirish V. Vaidya, Megha Manoj, Rohan Kumar Singh, and Harshith Gowda K.B. "Sternal Involvement in Anterior Mediastinal Seminoma - A Rare Presentation." Journal of Evolution of Medical and Dental Sciences 10, no. 23 (June 7, 2021): 1799–1802. https://doi.org/10.14260/jemds/2021/371.
17- Dhanvijay, Roshani, and Ruchira Ankar. "Guillain-Barré Syndrome: A Rare Case Report." Journal of Pharmaceutical Research International, October 26, 2021, 263–67. https://doi.org/10.9734/jpri/2021/v33i47A33012.
18- Dhanvijay, Roshani P., and Savita Pohekar. "Efficacy of Relaxation Therapy on the Breathing Pattern among Bronchial Asthma Patients." Journal of Pharmaceutical Research International, August 31, 2021, 55–60. https://doi.org/10.9734/jpri/2021/v33i42B32424.
19- Dhanvijay, Roshani, and Savita Pohekar. "Assessment of Auto-Rickshaw Drivers Knowledge Regarding the Effects of Air Pollution on Health and Its Prevention." Journal of Pharmaceutical Research International, August 20, 2021, 20–26. https://doi.org/10.9734/jpri/2021/v33i41B32340.
20- Ekhar, Deepti, Pooja Kasturkar, and Jaya Gawai. "Protocol on to Assess the Effectiveness of Planned Teaching on Knowledge Regarding to Adverse Effect of Antipsychotic Agents among Caregivers of Schizophrenia Patient." Journal of Pharmaceutical Research International, December 14, 2021, 392–98. https://doi.org/10.9734/jpri/2021/v33i57A34011.
21- Ekhar, Deepti, Samual Vanlalpeka, Shabnam Sayyad, Dharti Meshram, Trupti Uke, Jaya Gawai, and Pooja Kasturkar. "A Case Report on Alcohol Dependence Syndrome with Cannabis Addiction." Journal of Pharmaceutical Research International, December 14, 2021, 439–44. https://doi.org/10.9734/jpri/2021/v33i57B34078.
22- Faruqi, Saif, Kiran Kumar Ganji, Vinod Bandela, Anil Kumar Nagarajappa, Roshan Noor Mohamed, Muhannad Al Ahmed, Mohammed Farhan, Waleed Naif Alwakid, Kholood A. S. Al-Hammad, and Mohammad Khursheed Alam. "Digital Assessment of Marginal Accuracy in Ceramic Crowns Fabricated with Different Marginal Finish Line Configurations." Journal of Esthetic and Restorative Dentistry, October 19, 2021, jerd.12822. https://doi.org/10.1111/jerd.12822.
23- Fating, Lina. "Case Report on Management of Pregnancy in a Patient with Small Muscular Ventricular Septal Defect." Journal of Pharmaceutical Research International, July 26, 2021, 325–28. https://doi.org/10.9734/jpri/2021/v33i38A32091.
24- Fating, Lina S., and Tessy Sebastian. "Diploma Nursing Final Year Students with That of Degree Nursing Final Year Students." Journal of Pharmaceutical Research International, July 1, 2021, 115–21. https://doi.org/10.9734/jpri/2021/v33i34A31830.
25- Fating, Lina, Seema Singh, and Ruchira Ankar. "Application of Modified Lowa Model Evidence Based Practice on Trauma Care Nurses Regarding Head Injury." Journal of Pharmaceutical Research International, November 30, 2021, 253–58. https://doi.org/10.9734/jpri/2021/v33i52A33581.
26- Fating, Tejaswini B., Ashish W. Bele, Pratik Phansopkar, and Waqar Naqvi. "Approach of Physiotherapist towards Patient during COVID-19 Pandemic in Rural Area." Journal of Pharmaceutical Research International, July 15, 2021, 101–8. https://doi.org/10.9734/jpri/2021/v33i37A31985.
27- G., Swathi Reddy, and Karuna Taksande. "Comparative Evaluation of Topical Lignocaine Versus Intravenous Lignocaine for Laryngeal Mask Airway Insertion in Wardha, Maharashtra." Journal of Evolution of Medical and Dental Sciences 10, no. 28 (July 12, 2021): 2078–82. https://doi.org/10.14260/jemds/2021/425.
28- Gadbail, Amol Ramchandra, Sachin C Sarode, Minal S Chaudhary, Shailesh M Gondivkar, Satyajit Ashok Tekade, Monal Yuwanati, and Shankargouda Patil. "Ki67 Labelling Index Predicts Clinical Outcome and Survival in Oral Squamous Cell Carcinoma." Journal of Applied Oral Science 29 (2021): e20200751. https://doi.org/10.1590/1678-7757-2020-0751.
29- Gadegone, Aditi, Sachin Daigavane, and Ruta Walavalkar. "Effect of Music on Blood Pressure and Heart Rate in Patients Undergoing Cataract Extraction Surgery." Journal of Evolution of Medical and Dental Sciences 10, no. 20 (May 17, 2021): 1474–78. https://doi.org/10.14260/jemds/2021/309.
30- Gajbhiye, D. R., and N. N. Wadnerwar. "Assessment of Awareness Regarding Heavy Metal Toxicity in School Children." Journal of Pharmaceutical Research International, July 19, 2021, 111–16. https://doi.org/10.9734/jpri/2021/v33i37B32028.
31- Gaur, Vibhuti, Shruti Deshpande, and Tasneem Burhani. "The Efficacy of Physical Therapy Rehabilitation Program for Women Following a Modified Radical Mastectomy: A Case Report." Journal of Pharmaceutical Research International, July 27, 2021, 58–65. https://doi.org/10.9734/jpri/2021/v33i38B32099.
32- Gaur, Vibhuti Vinodsingh, Angela Arun Kapoor, and Pratik Arun Phansopkar. "Short Term Effects of Muscle Energy Technique vs. Active Release Technique in Improving Hamstring Flexibility and Pain in Patients with Acute Anterior Cruciate Ligament (ACL) Tear - A Randomized Control Trial." Journal of Evolution of Medical and Dental Sciences 10, no. 3 (January 18, 2021): 137–42. https://doi.org/10.14260/jemds/2021/29.
33- Gavhale, Pradnya, and Manjusha Mahakarkar. "The Efficacy of Pelvic Floor Exercise for the Stress Urinary Incontinence." Journal of Pharmaceutical Research International, September 4, 2021, 85–89. https://doi.org/10.9734/jpri/2021/v33i43A32469.
34- Gavhale, Pradnya, and Shalini Moon. "To Assess the Efficacy of

Lactational Counseling for Prevention of Breast Engorgement." Journal of Pharmaceutical Research International, September 3, 2021, 8–14. https://doi.org/10.9734/jpri/2021/v33i43A32459.

35- Gavhale, Pradnya Ravindra, and Shalini Haridas Moon. "To Evaluate the Effectiveness of Lactational Counseling on Prevention of Breast Engorgement among Postnatal Mothers." Journal of Evolution of Medical and Dental Sciences 10, no. 10 (March 8, 2021): 663–66. https://doi.org/10.14260/jemds/2021/143.

36- Gawai, Jaya, Pooja Kasturkar, and Trupti Uke. "Detecting the Cause of Depression Using BECK Depression Scale among Patients." Journal of Pharmaceutical Research International, July 5, 2021, 176–85. https://doi.org/10.9734/jpri/2021/v33i35A31887.

37- Ghogare, AjinkyaSureshrao, PradeepShriram Patil, and GanpatlalKodarbhai Vankar. "A Systematic Review of Childhood Psychological Traumas and Alexithymia among Persons with Alcohol Dependence Syndrome." Annals of Indian Psychiatry 5, no. 2 (2021): 104. https://doi.org/10.4103/aip.aip_54_21.