Case Report

# Atrial Septal Defect in an Aging Woman

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**ABSTRACT**

**Atrial Septal Defect (ASD) is a condition that results are an abnormal communication between the right and left atria. In adult, one of the most common types of congenital heart diseases (CHD) is ASD. Around 50 million adults have congenital heart disease (CHD) problem worldwide. This is a report of 66 years old female patient diagnosed with ASD around the age of 40 years due to the result of late appearance of sign and symptoms. Usually, the sign and symptoms of ASD develop around 30-40 years. Mostly sign and symptoms may be absent and may be late appearances of due to the malformation of the heart. The best control of ASD and related their complications and also its death before the age of 25 ASD closure. This case report does not focus only on surgery, angioplasty and catheter-based treatments but also emphasizes that education and about ASD. Education plays a very important role in these patients. Although life expectancy is not normal but patients generally survive up to adulthood without any surgical intervention, catheter-based treatments but many have reached to advanced age with medication as well as proper rehabilitation.**

**KEYWORDS: Atrial Septal Defect (ASD), congenital heart disease (CHD), catheter-based treatments, patients' education.**

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## INTRODUCTION

Atrial Septal Defect (ASD) is a condition that results in an abnormal communication between the right and left atria. ASD is of different types such as; (75%) Secundum ASD, (20%) Ostium primum ASD, (5%) Sinus venosus ASD and (<1%) Coronary ASD. One of the most common types of congenital heart diseases (CHD) in adults is ASD[1,2], around 50 million adult have congenital heart disease (CHD) problem worldwide[3,4]. Several studies shown that CHD has been improved and also decreased mortality rate, Unfortunately, in adult mortality rate still high as compare than general population[3,4].

Now day different kinds of treatments are available for ASD adult patients such as surgical, catheter-based treatment in both developed and developing countries. Especially, the Western countries are pressurized and shown that additional efforts to treat properly and control ASD in adolescents as well as adult patients. Unfortunately, the developing countries still have economic issues, poor health services, poor diagnosis and insufficient knowledge related management for ASD patients which leads to increased ASD related issues still[1].

## CASE REPORT

A 66 years old female patient diagnosed with Secundum type II with left to right shunt ASD and two Coronary Arteries blockage is reported. When she was born, initially she was asymptomatic but gradually she started facing health problems in her life. With the passage of time, patient's condition gradually becomes poor and she experiences difficulty in breathing during exercise, dry cough and fatigue. At about the age of 40, her family noticed her symptoms and finally she was diagnosed with ASD, surgery was recommended to her cardiologist but unfortunately her husband could not afford the surgery and she was surviving with only medicine.

Around the age of 50 to 55 her children took a decision for her surgery, but she refused believing that surgery might worsen her condition. When she became 60 years old, she got a silent heart attack on 23rd Feburary-2014, and according to cardiologist that silent heart attack was three days old. She was immediately admitted in ISRA Hospital, Hyderabad and her investigations were done which included; blood tests, electrocardiogram (ECG), echocardiography (ECHO) and angiography.

## RESULTS

ECG and ECHO was done and result was both interpreted like ECG result was Normal sinus rhythm, Right bundle branch block, Anteroseptal infarct, possibly acute lateral injury pattern and Acute Myocardial infarction and ECHO result was Dilated right sided chambers and left atrium, Moderately reduced left ventricular systolic function with SWMA (segmental wall-motion abnormalities), Mild to moderate mitral regurgitation, Moderate pulmonary artery hypertension and Secundum type ASD with left to right shunt. Fourth day of admission, angiography was done and result was found to be two vessels coronary arterial disease (CAD).

For 5 days she was admitted in Tabba Heart Institute, Karachi and cardiologist prescribed medicines and discharge her from the hospital. After fifteen days she

visited the hospital again and her few investigations were done for further treatment. Such as: Electrocardiogram, Echocardiography, transesophageal Echocardiogram and Dobutamine Stress Echogradiography.

After investigations, her cardiologist suggested Transcatheter Aortic Valve Implantation (TAVI) but she refused again. Her cardiologist prescribed medicines and some laboratory tests including; HbA1c, potassium, creatinine, GFR and sodium. These tests were repeated every 4 months before her each visit to the hospital.

***Prescription***

Tablet loprin 75mg 1×OD (once a day), tablet Diamicron MR 30mg 2×OD, tablet Valtec 80mg 1×HS (sleeping hour), tablet lasix 40mg 1×OD, tablet Nebrol fort 1×BD (twice a day), tablet Carvida 6.25mg 1×B, tablet Zopent 40mg 1×OD, tablet Orva 20mg 1×HS and Qalsan-D 1×B.

At present, she goes to hospital for her follow-up every 4 month according to her cardiologist and she is only medicine dependent. Neither any surgery nor any angioplasty is suggested to her by keeping her age factor in view. Her condition is fine but she still has difficulty in breathing during exercise, dry cough and suffocation.

**TABLE I: BLOOD TESTS OF COMPLETE BLOOD COUNT (CBC) OF AGING WOMEN WITH ASD DIAGNOSIS**

| Complete Blood Count (CBC) | Result | Normal Range |
|---|---|---|
| Hemoglobin | 11.9gm/dl | 11.5-16.0 |
| Haematocrit | 36.1% | 37-47 |
| Red Blood Cells (R.B.C) | 4.05 10e12/L | 3.5-5.5 |
| Mean Corpuscular Volume (M.C.V) | 89.1 FL | |
| Mean Corpuscular Hemoglobin (M.C.H) | 29.4 PG | 27-32 |
| Mean Corpuscular Hemoglobin Concentration (M.C.H.C) | 33.0% | 30-35 |
| White Blood Cells (W.B.C) | 13.0 × 10E9/L | 4.0-11.0 |
| Neutrophils<br>Lymphocytes | 72%<br>18% | 40-75<br>20-45 |
| Eosinophils | 02% | 1-6 |
| Monocytes | 08 | 2-10 |
| Basophils | 00% | <1 |
| Platelet Count | 291 × 10E9L | 150-400 |
| ESR (Erythrocyte Sedimentation Rate) | 36 mm in Hr | 0-25 |
| Cholesterol (serum) | 179 mg/dl | >200mg |

**TABLE II: BLOOD TESTS OF RENAL STUDIES OF AGING WOMEN WITH ASD DIAGNOSIS**

| Renal Studies | Result | Normal Range |
|---|---|---|
| Urea (blood) | 50 mg/dl | 20-45 |
| Creatinine (serum) | 0.9 mg/dl | 0.7-1.2 |
| Sodium | 141 mmol/L | 136-149 |
| Potassium | 4.5 mmol/L | 3.8-5.2 |
| Chloride | 102 mmol/L | 98-107 |
| Bicarbonate | 21 mmol/L | 25-29 |
| Uric Acid (serum) | 5.6 mg/dl | 2.6-6 |

**TABLE III: BLOOD TESTS OF CARDIAC STUDIES OF AGING WOMEN WITH ASD DIAGNOSIS**

| Cardiac Blood Tests | Result | Normal Range |
|---|---|---|
| (Cardiac Enzymes) KMB | 218 U/L | Up to 25 |
| Troponin I | >50.000 ng/ml | Female less than or equal to 0.13<br>Male less than or equal to 0.33 |
| Brain Natriuretic Peptide (BNP) and N-terminal pro b-type natriuretic peptide (NT-pro BNP) | 6725Pg/ml | |

## DISCUSSION

In adults, around the CHD 22-40% and 10% ASD was recorded. Different types of ASD but most common type of ASD is Secundum ASD[6]. Usually, symptoms appear by age because ASD is asymptomatic in infancy and childhood. About 90% of patients coming in hospital by the age of 40 years experiences of symptoms such as difficulty in breathing during exercise, fatigue, palpitation without treatment[6,7]. Similarly, this patient also had history of difficulty in breathing during exercise, dry cough and suffocation since 40 years, and now she is 66 years old and patient has multiple complications for example; Ischemic Heart Disease (IHD) with two arteries blocked and myocardial infarction. At present patient is only medicine depended and no any history of angioplasty or surgical treatment is done. Mostly sign and symptoms may be absent and may be late appearances of due to the malformation of the heart[8,9]. Most children are asymptomatic, though some may experience fatigability very soon and exertional dyspnea. Symptoms usually take about 30-40 years to develop. Nowadays, there are different types of treatments available for closure of ASD such as surgical treatment, catheter-based treatment etc. as well as medicine but health education plays very important role in this kind of patient[10,11]. Mostly sign and symptoms appear very late age and it's not easy & affordable for all patients such as this patient.

## CONCLUSION

The most common congenital disease in adults is ASDS. The best management of ASD can control its related complications and also death before the age of 25. This case report does not focus only on surgery, angioplasty and catheter-based treatments but also emphasizes the education and about ASD. Education plays a very important role in these patients. Although life expectancy is not normal but patients generally survive up to adulthood without any surgical intervention, catheter-based treatments but many have reached to advanced age with medication as well as proper rehabilitation.

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## AUTHOR CONTRIBUTION

Bai R: Created idea, literature searching, and manuscript writing.
Sardar S: Proof reading and critical review

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