pathophysiological mechanisms are highly variable. Among patients undergoing coronary angiography, the incidence depends on the population studied and the criteria used to define an anomaly. One large study reported an incidence rate of coronary anomalies of 1.3% for adults undergoing catheterization primarily for the detection of coronary artery disease. This is the first ever study conducted in western Rajasthan to detect the incidence and pattern of coronary anomalies.

Methods: We retrospectively studied 8500 coronary angiographies (CAG) done in our institution over a period of 12 years from 2004 to 2015 for detection of incidence and pattern of coronary anomalies. Patients with ischemic heart disease and valvular heart disease who underwent CAG were included in the study. Patients with congenital heart diseases were excluded from the study. Patients with other coronary anomalies like ectasia, myocardial bridging, abnormal high and low origin of coronary arteries from normal sinus and separate origin of the conus artery from the right coronary sinus (RCS) were also excluded from the study.

Results: Out of the 8500 angiograms screened, a total of 108 coronary anomalies were detected (incidence of 1.27%). Anomalies of origin and course was the most common anomaly (106 out of 108 patients) followed by anomalies of coronary termination (fistulas) which was seen in just two patients. Most common anomaly was absence of left main artery with separate origin of the left anterior descending (LAD) artery and left circumflex artery (LCx) ($n = 36$, 33.3%), followed closely by anomalous origin of right coronary artery (RCA) from left sinus ($n = 34$, 31.48%). Anomalous origin of LCx from right sinus/RCA was the third most common anomaly ($n = 22$, 20.37%). Other rare anomalies include anomalous origin of left coronary artery from right coronary sinus ($n = 6$, 5.55%), RCA from posterior sinus ($n = 4$, 3.7%). Single coronary artery, LAD from RCA and coronary artery fistula were seen in two patients each ($n = 2$, 1.85%)

Coronary anomaly	Number of patients ($n = 108$)	Angiographic incidence %	Anomaly incidence %
Separate origin of LAD and LCX	36	0.42	33.3
RCA arising from LCS	34	0.40	31.48
LCX arising from RCS/RCA	22	0.25	20.37
LCA arising from RCS	6	0.07	5.55
RCA arising from posterior sinus	4	0.04	3.70
Single coronary artery	2	0.02	1.85
LAD from RCA	2	0.02	1.85
Coronary artery fistula	2	0.02	1.85

Conclusion: In our study though the total incidence of coronary anomalies was similar to that in other studies, the pattern of coronary anomalies was slightly different from that reported from different parts of the world.

Beauty of device closure in RSOV

L. Satish *, Sanjeev Sanghvi

MDM Hospital Campus, Shastri Nagar, Jodhpur, Rajasthan 342003, India

Introduction: Sinus of valsalva aneurysm is a rare congenital abnormality. When it ruptures, mostly to the right heart resulting in left-to-right shunt, the patients may experience severe heart failure. We here present a case of ruptured sinus of valsalva (RSOV) to right atrium which was closed by PDA device. Patient despite all odds finally survived and now leading a normal life.

Case report: A 40-yr-old female patient presented to us with dyspnea and palpitations since 1 week. On examination, there was bounding pulse with elevated jugular venous pulse (JVP). Examination revealed continuous murmur in lower sternal border and ECG showed atrial fibrillation. Further, 2D Echo done showed aortic sinus aneurysm arising from non-coronary cusp, which had ruptured into the right atrium. Patient was diagnosed to have RSOV to right atrium and was given options of device closure or surgery. As patient had some financial problem, patient asked for some time to make necessary arrangements and then got discharged. Patient was discharged with diuretics, beta blockers.

Patient did not turn up for 2 months and later when she visited us after 2 months she was extremely cachexic. She had severe nausea, vomiting, weight loss of about 15 kg. On examination, she had elevated JVP (15 cm of water) and gross congestive hepatomegaly (7 cm from costal margin) and was in atrial fibrillation. Looking at her condition this time surgeons also refused surgery. And then we planned for device closure.

The procedure was performed under local anesthesia. A PDA device (LIFE TECH) of size 14/12 mm was chosen to close the defect. Patient tolerated the procedure very well and 2D Echo done showed no AR, TR or residual shunt. Patient was put on prophylactic antibiotics and on aspirin 75 mg. Patient later started taking feeds and her appetite improved.

But this was not the end of story. On 3rd day after procedure, patient developed recurrent episodes of VT and continuous marathon CPR and DC was given. At one stage we thought stopping our resuscitation measures, but luckily by that time our ABG report came which showed hypokalemia and hypocalcaemia, which was the culprit. Which might have occurred due to refeeding syndrome (this syndrome has been described in extremely cachexic patients in whom refeeding leads to electrolyte disturbances). Kcl and calcium gluconate infusion with inotropes was given with careful monitoring. And by god's grace she later gradually improved and her pre discharge echo showed 2D LVEF 15–20% and she was discharged on 12th day. Now, she is coming for regular follow-up and her symptoms have improved from NYHA 4 to NYHA 1 and she has regained her weight and now in normal sinus rhythm. 2D Echo showed no residual shunt, decreased PA pressures, and 2D LVEF 50–55%.

Implication to clinical practice: For patients with RSOV, although conventional surgical correction under cardiopulmonary bypass carries low mortality, postoperative septicemia, infective endocarditis, and prolonged recovery time make percutaneous device closure an attractive alternative. This case clearly demonstrates the beauty of device closure.

A rare association – Noonans syndrome with coarctation of aorta and cleft anterior mitral leaflet

Srikanth *, Ravi Srinivas, Adikesava Naidu, Y.V. Subba Reddy

Osmania Govt. Hospital, Hyderabad, India

Introduction: Noonans syndrome is a multisystem disorder, autosomal dominant with variable penetrance, and with an estimated prevalence of 1 in 1000 to 1 in 2500 live births. It is characterized by distinctive facial features, short stature, chest deformity, and congenital heart disease. It is diagnosed clinically but genetic mutation can be identified in 61% of cases. In 1962, Jacqueline Noonan, a pediatric cardiologist described 9 cases whose faces were remarkably similar. The physical findings are short stature,