Transradial primary PCI in anomalous RCA with JR 6 Fr catheter

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A 63-year-old diabetic male presented with acute STEMI (IWMI) with hypotension and bradycardia. Coronary angiogram done via right femoral route with TPI back up and inotrope support. CAG revealed normal left coronaries, however right coronary was anomalously arising from left sinus and showed total thrombotic occlusion of the proximal segment. Attempts to cannulate the RCA with AL, AR, JL or MP failed so changed to right radial route and finally succeeded with Judkins right guide catheter with poor back up. Guide support reinforced with anchor balloon and buddy wire. Thrombosuction done with export catheter aspirated large amounts of thrombus. Abciximab infusion started. Lesion stented with 4.0 by 33 mm DES and TIMI 3 flow achieved. Patient became hemodynamically stable and sinus rhythm restored next day. The patient was discharged on the 4th day.
Anomalous RCA is rare (0.9%) and there are few case reports of acute MI in such cases which have been done with various catheters as AL, AR, JL, Voda, or MP.
This may be the first reported case of successful PCI in anomalous RCA with JR catheter.
In acute STEMI, time is of utmost importance and decisions have to be made fast. As such threshold to change hardware should be low whenever conventional catheters fail and one should try all tricks in such situations for a successful PCI and patient outcome.

Left submandibular arteriovenous malformation successfully treated by coil embolization

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Background: Arteriovenous malformations (AVM's) are congenital, pathological direct communications between arteries and veins that bypass capillaries and become evident later in life. These rare lesions, unless suspected may present with life threatening complications. Percutaneous coil embolization technique can be used for its successful treatment.
Method: A 16-year-old boy presented with a soft, pulsatile swelling in the left submandibular region measuring 6 cm × 4 cm with no buccal cavity involvement. CECT face and MR angiography performed at another institution revealed AVM's with arterial feeding vessels from left external carotid artery (ECA) and venous drainage into left internal jugular vein (IJV). Elective preoperative arterial embolization followed by surgical excision was originally planned. Digital Subtraction Angiography (DSA) was performed under local anesthesia using right femoral arterial puncture. Selective left ECA angiogram revealed high flow mandibular AVM supplied by two branches of facial artery and drained by the retromandibular vein into left IJV. Facial artery was selectively catheterized using JR4 catheter; angiogram and DSA was done for optimal catheter position and sizing. Two MREYE coils (5 mm) were deployed in left facial artery. Repeat angiograms done confirmed continued closure of the AVM and resolution of the swelling.
Conclusions: Preoperative intraarterial embolization can substantially reduce intraoperative hemorrhage during surgical resection. This case shows that mandibular AVM'S may be effectively treated by percutaneous techniques without the need for extensive surgery.

Massive hematuria due to congenital renal arteriovenous malformation successfully treated by renal artery embolization

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Background: Congenital renal arteriovenous malformations (AVMs) are very rare benign vascular lesions and a rare cause of massive hematuria. They are more common in females, with right kidney as the most frequent site. These lesions are never entirely cured and may recur because of their complexity.
Method: A 46-year-old man presented with massive hematuria and recurrent episodes of urinary retention. CECT and MRI abdomen revealed left renal pelvis and upper ureter wall thickening which initially led to the suspicion of transitional cell carcinoma (TCC) of upper tract. Retrograde studies could not reveal any filling defect in renal pelvis. Urine cytology was negative. In view of persistent hematuria patient underwent selective left renal arteriography, which revealed AVM's involving posterior segmental branch and successful selective transcatheter embolization of the feeding vessel was performed using embolization coils. He again developed gross hematuria on 7th post-procedure day and left renal angiogram revealed new multiple feeding vessels from left anterior segmental artery and left renal artery which was not present in previous angiogram. Coil embolization followed by gel foam embolization was done to left renal artery. Hematuria resolved postprocedure and postembolization syndrome was conservatively managed.
Conclusions: This case highlights selective renal arteriography as both diagnostic and therapeutic modality for massive hematuria from congenital renal AVM's. Coil and gel foam embolization are safe, effective and inexpensive measures for the treatment of life threatening hemorrhage from renal AVMs.

Long-term (4-year) outcomes after percutaneous coronary intervention with the 38-mm length resolute zotarolimus-eluting stent: RESOLUTE ZES 38-mm substudy

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Background: Given the low rates of adverse cardiovascular events associated with current-generation drug eluting stents (DES), patients are being treated for percutaneous coronary intervention in ever-more complex cases, including diffuse coronary artery

disease. Limited long-term data, however, is available on long DES. The prospective RESOLUTE 38-mm substudy of the RESOLUTE Global Clinical Program enrolled patients requiring treatment of de novo lesions in native coronary arteries with a 38-mm length Resolute™ DES (Santa Rosa, CA, Medtronic, PLC).
Methods: The RESOLUTE 38-mm substudy includes the RESOLUTE US and RESOLUTE Asia prospective, observational, nonrandomized, multicenter trials that enrolled patients from 29 sites across the United States (U.S.) and 17 sites across Asia. Patients enrolled in both studies who received at least one 38-mm Resolute DES in a lesion ≤35 mm in length and reference vessel diameter of 3.0–4.2 mm were included in the 38-mm substudy. Up to two lesions (in separate vessels) could be treated.
Results and conclusion: A total of 223 patients (114 in RESOLUTE US and 109 in RESOLUTE Asia) were enrolled. Average age was 61 years old, 38% had diabetes mellitus, 54% had double or triple vessel disease, and 32% had prior myocardial infarction. Most (91%) treated lesions were American Heart Association Class B2/C, total stent length per patient was 44.6 ± 14.3 mm, and reference vessel diameter 2.8 ± 0.4 mm. Three-year follow-up in 221 (99.1%) patients has been previously presented: target lesion failure (TVF) was 10.4% and comprised of 2.3% cardiac death (CD), 5.4% target vessel myocardial infarction (TV-MI), and 4.1% target lesion revascularization (TLR). The incidence of definite and probable stent thrombosis (ST; Academic Research Consortium definition) was 0.9% at 3 years. There was furthermore no difference at 3 years between RESOLUTE Asia and RESOLUTE US in the rates of TLR (1.9% vs. 6.2%, $p = 0.172$), CD (0.9% vs. 3.5%, $p = 0.370$), TV-MI (4.6% vs. 6.2%, $p = 0.769$), or ST (0.9% vs. 1.8%, $p > 0.999$); however, TLF (5.6% vs. 15.0%, $p = 0.027$) was lower in RESOLUTE Asia. The prespecified analysis of RESOLUTE 38 mm substudy confirmed the safety and efficacy of the 38 mm length Resolute DES at three years with no observed increased risk for restenosis (TLR 4.1%) or stent thrombosis (0.9%) despite the longer stent length. Long-term outcomes at four years will be available at Cardiological Society of India 2015 to evaluate whether these low clinical adverse events with the 38-mm length Resolute DES were sustained.

Left main coronary artery disease – A glorified indication of PCI

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Introduction: Left main coronary artery (LMCA) stenosis is considered an attractive target for balloon angioplasty because of the vessel's large caliber, the lack of tortuosity, and the short lesion length. Histologically, the LMCA has the most elastic tissue of the coronary vessels, accounting for the poor response of the LMCA to simple balloon angioplasty. However, coronary stents have been shown to reduce the immediate need for coronary artery bypass surgery (CABG) for abrupt vessel closure and likelihood of restenosis after balloon angioplasty. Stenting of unprotected LMCA stenosis is therefore considered a therapeutic option in selected patients.
Case report: A 65-year-old male presented to us with complaints of chest pain, anxiety, and sweating. On examination, his pulse was 106 per minute, blood pressure was 110/80 mmHg, and chest was clear. Other physical examinations were normal. ECG showed ST segment depression in all leads except aVR lead, which showed elevation. He was planned for coronary angiography.
His coronary angiography showed 90% stenosis of LMCA and 60% stenosis of LCX. He was planned for angioplasty and stenting to LMCA. A XB 3.5 6F guiding catheter was used. Two balanced middle weight (BMW) coronary wires were put in left anterior descending artery and left circumflex artery. Lesion was predialated with noncompliant balloon size 3.5 mm × 10 mm at the pressure of 15 atm. Coronary stent size 4 mm × 18 mm was deployed at the pressure of 10 atm. Post-dilatation was done with noncompliant balloon size 4 mm × 10 mm at the pressure of 18 atm. Final result was good and there was no residual stenosis and dissection. Patient was stable and pain free after the procedure.
Implication to clinical practice: Coronary artery bypass surgery is considered as the gold standard treatment of unprotected LMCA disease. Over the last 20 years, improvement in stent technology and operators experience explained the increased number of reports on the result of percutaneous intervention for treatment of LMCA lesion. Recent data comparing efficacy and safety of PCIs using drug eluting stents and coronary artery bypass surgery showed comparable results in terms of safety and a lower need of repeat revascularization procedure.

Retrieval of devices – Percutaneous techniques

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Intravascular foreign bodies which are retained are a complication of percutaneous procedures. Recently percutaneous retrieval of intravascular foreign bodies has become a frequently used technique. Various intravascular foreign bodies include fragments of central venous catheters (most common), knotted pulmonary artery (Swan Ganz) catheters, lost guidewires or guidewire fragments, misplaced embolization coils and metallic stents.
We present 3 cases of retrieval of devices from percutaneous intervention.

- Retrieval of Innove wire,
- Retrieval of central venous catheter wire,
- Retrievel of central venous catheter.

Perimembranous VSD device closure using Amplatzer Duct Occluder 1: Our experience

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Background: In the last two decades, percutaneous techniques to close cardiac defects have been developed. Owing to anatomical relationship of conduction system and perimembranous ventricular septal defect (PMVSD) location, there are reports of high incidence of conduction disturbances and aortic regurgitation after device closure. We aimed to evaluate the safety and efficacy of transcatheter device closure of PMVSD with Amplatzer Duct Occluder I (ADO) with special emphasis on conduction disturbance. ADO I has no RV disc and long waist in comparison with other devices and thus thought to produce less compression of surrounding tissue and producing less conduction disturbances.