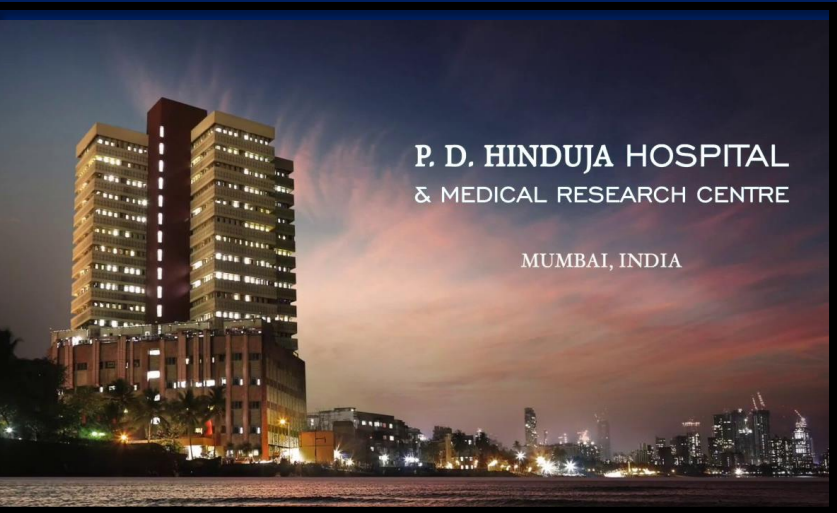




SPONTANEOUS THYROID HEMORRHAGE IN A PATIENT ON DUAL ANTIPLATELET THERAPY FOR RECENT CARDIAC STENTING

Lala Murad ¹, Madhuri Sudhakar¹, Monteiro Joseph ², Rajani Rajesh ³

¹ Department of Surgical Oncology, P. D. Hinduja Hospital, Mumbai, India. ² Department of Anaesthesiology, P. D. Hinduja Hospital, Mumbai, India. ³ Department of Cardiology, P. D. Hinduja Hospital, Mumbai, India

INTRODUCTION

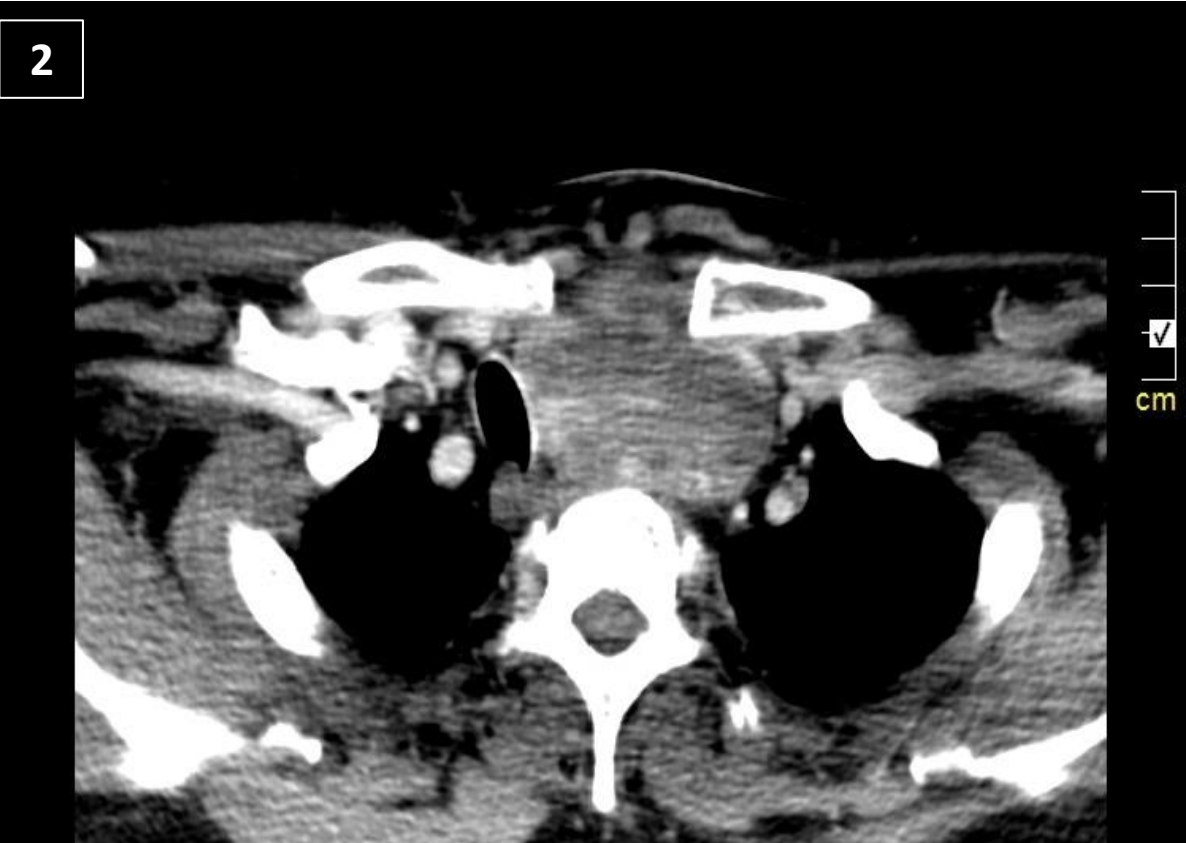
Spontaneous bleed into the thyroid gland usually presents with pain and discomfort. Even though the thyroid gland is very vascular, there are very few cases of spontaneous bleed reported in the literature. We describe a case of spontaneous haemorrhage into the thyroid gland in a patient on dual anti platelet therapy (DAPT) with a recent history of cardiac stenting. This situation throws up many challenges in the management.

CASE REPORT

- A 58 year old man presented to the emergency room with complaints of **severe pain** and **sudden swelling** on the left side of the neck since one day.
- No history of trauma to the neck or violent coughing.
- No history of recent onset of hoarseness of voice.
- He had undergone a coronary angiography and percutaneous intervention with placement of a drug eluting stent to the left anterior descending artery and left circumflex artery a week prior to this event. Post stenting he was put on dual antiplatelet therapy (aspirin 75 mg and ticagrelor 90 mg).
- On examination** : there was a 9 x 7 cm tender, firm swelling on the left side of the neck.
- The lower border could not be felt. The trachea was shifted to the right.
- He was hemodynamically stable and had no signs of airway compromise.
- His haemoglobin and thyroid profile were within normal limits with an INR of 1.2.
- A contrast enhanced CT Scan of the neck revealed hemorrhage into a left thyroid nodule with retrosternal extension and significant displacement of the trachea to the right. Neck and upper thoracic vessels were displaced laterally (**Fig. 1 - 4**).



Axial section showing left side hemorrhagic thyroid cyst with contralateral normal thyroid lobe.



Axial section showing deviation of the trachea to the right and retrosternal extension



Coronal section showing retrosternal extension of the left thyroid nodule with displacement of thoracic vessels. A nodule can be seen in the lower pole of the right lobe of thyroid gland.



Sagittal section showing the retrosternal extension upto the innominate vessels.

- A multidisciplinary discussion between the surgeon, cardiologist and anesthesiologist was held to chart out a course of action.
- A balance had to be drawn between emergent safe surgery and waiting for the effects of the DAPT to wane. Additionally, in view of the recent stenting, the antiplatelet therapy had to be stopped for as short a duration as possible.
- Within a few hours of admission the pain suddenly ceased and the swelling reduced. This was probably due to capsular rupture and extravasation. Forty eight hours after cessation of DAPT, he was taken up for a left hemithyroidectomy.
- Intraoperative Findings** : There was a 9 cm left thyroid nodule with retrosternal extension and capsular rupture with blood clots under the strap muscles tracking into the mediastinum but no active bleeding vessel. The opposite thyroid lobe had subcentimetre nodules. The patient was extubated on table and had a normal voice with a smooth postoperative recovery. On day 2, the drain was removed and patient was discharged. He was restarted on DAPT at discharge. The final histopathology showed benign colloid goiter with hemorrhage.

DISCUSSION

- Hemorrhage into a thyroid nodule can occur after blunt cervical trauma, fine needle aspiration cytology, a stressful event (violent cough or straining during defecation), malignancy and anticoagulant therapy¹.
- The thyroid capsule is highly vascular. The source of bleeding in a nodule is generally venous due to rupture of abnormal vessels with deficient adventitia, musculature and elastic tissue¹.
- The clinical spectrum can range from asymptomatic presentation to life threatening airway obstruction.
- Treatment modalities include observation, simple aspiration or emergency thyroidectomy.
- In this case the sudden onset of pain is attributable to the capsular stretch caused by the large hematoma and the sudden relief of pain due to spontaneous rupture of the hematoma, lowering his probability of airway compromise. In a case of tracheal deviation, the anesthesiologist should be prepared for a difficult intubation and may have to perform a fiberoptic intubation
- The unique challenges faced in this case were a large hematoma with retrosternal extension causing tracheal deviation with luminal narrowing. This situation favoured urgent surgical intervention, but there was a reluctance to stop DAPT because of recent placement of a drug eluting stent.
- Dual antiplatelet therapy involving P2Y12 inhibitors have no proven agents to rapidly reverse the antiplatelet effects in case of emergency surgery. Platelet transfusion and desmopressin have had limited success at antiplatelet reversal³. It takes 3-5 days for recovery of the antiplatelet action after cessation of ticagrelor⁴. The preoperative platelet function tests have a higher negative predictive value rather than a positive predictive value. Table 1 outlines the recommendations by Song JW et al on perioperative DAPT for non-cardiac surgery after percutaneous coronary intervention⁴. If surgery cannot be deferred, perioperative therapy with aspirin should be continued and restart Ticagrelor 24 - 72 hours of the surgery (bridge therapy) to reduce the risk of thrombotic events.

Recommendations on Perioperative Dual Antiplatelet Therapy for Non-cardiac surgery after Percutaneous Coronary Intervention

Elective surgery	After balloon angioplasty	Delay for 14 days
	After bare metal stent placement	Delay for 30 days
	After drug eluting stent placement	Delay for 6 months
Emergent / Urgent surgery	Dual antiplatelet therapy	Consider continuation of DAPT
	In surgeries with serious bleeding risk	Consider continuation of aspirin (or 3-4 days of cessation, if necessary) & Discontinuation of P2Y12 inhibitors with bridge therapy using Cangrelor, Tirofiban or Eptifibatide
	Following surgery	Restart dual antiplatelet therapy as soon as possible following surgery for the intended duration after percutaneous coronary intervention

CONCLUSION

Spontaneous bleed into the thyroid gland needs an alert clinician to prevent and treat a potential respiratory emergency. With the increase in number of patients receiving coronary stents with antiplatelet therapy and the consequent risk of bleeding, physicians should be aware of the pharmacology of newer antiplatelet agents. A consensus should be reached between all stake holders towards safe surgery without putting the patient at risk for thrombosis of the stent. Meticulous dissection with adequate hemostasis is essential during surgery.

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