Emergencies A Series - 5

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Hereby describing 2 cases of severe anaemia, one is associated with hypothyroidism and pericardial effusion. The second case was not responding to repeated packed red cell transfusion.

Summary of case 1:

A 45-year-old female from a village near Perambalur was admitted with an empirical diagnosis of severe anaemia and hypothyroidism to be ruled out. Chest X-rays on Days 1 & 2 were with huge Cardiomegaly. On admission was complaining of giddiness during walking and it lasted for about a month. she had abdominal distention and swelling in her legs for about 15 days. She had dyspnea of grade 2 for 6 months. Hard of hearing and urinary retention for about a month. she had undergone a tubectomy 25 years ago. Her last period was 3 months before with altered colour of menstrual fluid. Clinically conscious oriented afebrile periorbital oedema and facial puffiness were there. Pallor +++ bilateral pitting leg oedema was present. Heart sounds were heard, but no murmur. sitting BP was 100/70. NVBS in both lung fields, hepatomegaly was present. Chest X-ray gross cardiomegaly. ECG-low voltage complexes. TSH of more than 100 u/IU/ml (0.3 -4.5) Urea, creatinine and blood sugar were in normal range. 1 unit of group A blood was transfused. Otherwise, she has managed with iron sucrose infusion 200 mg in 100ml NS along with injection neurobion forte, inj thiamine, folic acid tablets and astymine capsule. A dose of albendazole was also given as a stat dose. Haemoglobin increased to 6.3 gms % on Day 5 supported with inj Lasix 20 mg IV twice. Her heart rate was 76, Blood pressure was 90/60 mm of Hg. A total of 1000mg of iron dextrose in 5 days with inj neurobion, inj thiamine along with folic acid and astymine for 5 days. Tablet Eltroxin 100 micro gm on an empty stomach for her hypothyroidism. She had her cycle after 3 months. Her hemoglobin on 9/4/21 was 8.9 gms % On 3/8/21 her hemoglobin was 10gms and MCV 83fl.

Investigations:

Day 1: Hemoglobin 3.5gms %, red cell counts 2.1 million/cu ml, MCV 58, ESR 30 mm/hr. Urea, creatinine, liver function test and sugar were in the normal range.

Peripheral smear study: microcytic hypochromic anaemia

Echo report:

Concentric LVH / normal chamber dimension.

No RWM abnormality / adequate LV function 58% Large Pericardial effusion present

Echo-free space RV anterior 25mm

LV posterior 46mm

LV lateral 54mm

CT thorax screening – severe pericardial effusion noted.

Summary of case 2:

An 80-year-old male was admitted with a month-old lower limb oedema, a known case of systemic hypertension and bronchial asthma for a few years. On examination conscious oriented afebrile pallor ++ BP 110/60, heart rate 86/min SPO2 97%, Peripheral smear study – severe micro cystic hypochromic anemia, Anaemia profile: Red

cells count 1.57 million/ dl, Hb 4.4 gms, MCV 74fl, CRP negative, serum iron level 14 microgram/dl, TIBC 258 micro gm. He was seen at 2 different hospitals in 2 major cities for his anaemia. He was managed with packed red cell 4 units in each hospital in a span of 15 days. His serum iron was very much lower 14 micro gm/dl (N-65-175Microgm/dl). He was treated with B12 and folic acid for 3 days and an iron infusion of 600 mg in 3 days after the serum iron report. He was discharged and advised to check his blood pressure in a nearby hospital and to be reviewed in a week.

Peripheral smear 2:

Predominantly normocytic, normochromic cells mixed with few macrocytes, a moderate number of anisocytes and poiklocytes were seen. WBC is normal in morphology and distribution.

Impression- Normocytic normochromic anemia

The patient was referred to a gastroenterologist and advised to pack red cells which was deferred.

Day 2: increased frequency & polyurea.

Day 3: oedema legs present, weight decreased, BP 110/70 Hg

Day 5: oedema legs decreased, but was still present. Left is greater than right. No antihypertensives

After 10 days haemoglobin was 7gm %, and red cell counts were 2.63 million/cubic mm. systolic murmur was present. Blood pressure 170/80 Hg. After a month his hemoglobin was 9.5gm%. After 10 days slowly antihypertensives were restarted. He was on cardace 5mg hs, carvedilol 6.25mg bid, k-ion tid, neurokind LCod and diuretic prn.

A note on iron deficiency anaemia (IDA)

Normally IDA develops in stages (1). In stages 1 and 2 there is no overt anemia. Only in stage 3 do symptoms of anaemia develop. In stage 1 there is a low level of ferritin. Other parameters Hemoglobin (Hb) / serum iron and TIBC are normal. In stage 2 TIBC rises, and serum iron and ferritin will decrease. Hb level is normal. In stage 3 only Hb, serum iron, and ferritin are low and TIBC increases. A common cause of iron deficiency is hookworm and other worm infestation, as Gastrointestinal disorders like ulcers, and haemorrhoids. Regular use of aspirin and alcohol leads to gastritis and chronic bleeding. Treating this IDA is to treat the cause first and then supplement iron. Normally 65 mg of ferrous sulphate in 3 doses is sufficient. A full course of 6 months or more is essential. Because of the risk associated with red cell transfusion, it's rarely warranted (1). Our experience shows iron infusion will have a quick effect and the least side effects. In case of severe IDA, we use iron infusion, and maturation factors like B12 and folic acid along with amino acids.

In the 2nd patient serum iron was very much low. Supplementing iron with vitamins raises the Hb in whom transfusion of the packed red cells. My Hypothesis – when we infuse blood or Packed red cells, functions of the bone marrow decrease, and the production of the red cells will decrease.

Hypothyroidism and pericardial effusion

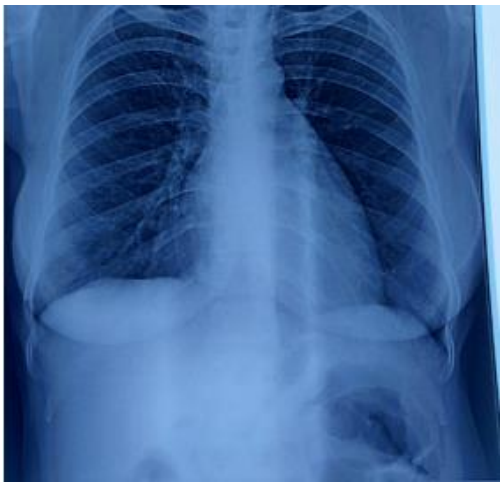
Severe hypothyroidism produces large clear high protein high cholesterol effusion. Many effusions in hypothyroidic patients are very large chronic and asymptomatic, discovered accidentally by chest x-ray. Heart sounds may not be muffled radiographs can only be suggestive. Echo-free space is posterior to the left ventricle (small to large effusion) posterior and anterior moderate to large effusion. Behind the left atrium is a very large effusion. Cardiovascular effects of

hypothyroidism where cardiac output is decreased because of diminished total blood volume, impaired LV contractility and bradycardia. Hypertension results from increased systemic vascular resistance. Pericardial effusion results from increased capillary permeability and interstitial protein leaks. Pericardial effusion is a common clinical finding in overt myxedema. Cardiac tamponate is rare and the effusion disappears with thyroid replacement therapy.

See serial X-ray pictures with normalizing of heart size. Changes in heart size in pericardial effusion with thyroxin therapy.

X-Ray 1 Day 1

X-Ray 2 Day 2



X-Ray 3 After 5 months

X-Ray 4 After 10 months

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