A Case Report on Nursing Care of Takayasu Arteritis

Abstract

Background: A rarity of form of vasculitis, also known as TAK, induces inflammation in the walls of the major arteries in the body: the aorta and its main branches. The disease results from a body attack and inflammation of the walls of the arteries caused by the body's own immune system.

Case presentation: A 37-years-old women had complaints of fever, giddiness, weakness of right upper limb and lower limb since1 day. After undergoing The whole blood count, liver function examination, renal and MRI function checks, CT scan, angiography, etc. was studied. She was diagnosed with Takayasu Arteritis. She had past medical history of neck pain and numbness since January 2020. For these complaints her family members referred her in private hospital. There is no significant history of surgery in present, lower segment caesarean section and piles operation was done previously. Physical findings were normal except the Glasgow Coma Scale score was 11 that is, patient was semi-conscious, In General appearance patient activity was dull and weak due disease condition, Patient's all routine investigations were normal except few like Total WBC count was increased (21,500 cell /cm) due to increased infection, Granulocytes were increased that is 75 % due to infection and autoimmune disease, ESR was increased that is 52mm/h. Angiography showed block in the right common carotid artery, MRI- showed Acute infract in left fronto temporoparietal region involving insular par ventricular white matter, absent flow in distal M1 segment of MCA.

Conclusion : The most frequently involved arteries and the angiographic trends in this Takayasu Arteritis study were subclavian arteries and carotid arteries. The difference between angiographic characteristics may lead to clinical differences. Operations and surgery should be carried out at various points in the course of the disease.

Keywords: Takayasu's arteritis, Magnetic resonance imaging, Computed tomography Scan,

Introduction:

A uncommon type of vasculitis involving inflammation in the walls of the major arteries in the body, the aorta and its main branches, is Takayasu's arteritis, also called TAK. The disease is caused by an attack from the body's immune system, which causes inflammation of the artery walls. Inflammation can reduce blood flow to many parts of the body and reduce arteries.

Arteritis of Takayasu can lead to a low pulse or pulse failure of arms, legs and organs. Therefore, people called the disease 'pulse less disease.' There might be patients with TAK who have no symptoms, and this disease is so rare as to be unable to identify it by physicians. Thus, it's sometimes postponed for many years, often.[1]

Case presentation:

A 37-years-old women had complaints of fever, giddiness, weakness of right upper limb and lower limb since1 day. Otherwise there was no history of cough, cold or no history of chest pain, breathlessness and no history found of syncope and seizure. After investigations have taken place such as full blood count, liver function test, kidney function test, MRI, CT (computed tomography), scan, angiography and so on. She was diagnosed with Takayasu arteritis ,She had past medical history of neck pain and numbness since January 2020. For these complaints her family members referred her in private hospital. There is no significant history of surgery in present, lower segment caesarean section and piles operation was done previously, Patient living with her husband and her son. There is no history of communicable and non communicable diseases in the family. Patient belongs to middle class family. And she earns 12,000/- month. They live in their own house made up of cement and brick. There is proper electricity and water supply in their house. Patient and her family only consume vegetarian diet. Patient does not have any bad habit like smoking or drinking alcohol. Her sleeping pattern was normal.

Clinical findings:

Patient's all routine investigations were normal except few like Total WBC count increased that is 21,500 cell /cumm due to Increased -Infection can cause number of WBC increased in blood(enterococci and E-coli was present), Granulocytes is increased that is 75 % due to Increased- to give response to infection and autoimmune disease, ESR is increased that is 52mm/h Increased- Due to inflammation. In Culture Report Peripheral smear Neutrophilic leucocytosis present, and in Urine microscopy E-coli and Enterococci bacteria was present.

Physical examination:

Physical examination is normal except few things like the Glasgow coma scale score was 11; that is patient was semi-conscious, In General appearance patient activity was dull and weak due disease condition, Patient mental status is normal they oriented to time, place, person, and attainable, but slight behavior changes occur due to the hospitalization and diagnostic procedure. Patient height is 162cm, weight 55 kg, BMI 20.99 kg/m^2, a Patient vital sign is normal. That is temperature 98.6^0F, pulse: 82 beats/minute, respiration: 22 breath/minute, blood pressure 122/84mmhg, Face was Asymmetry of features due to right side facial paralysis, In the eye examination, both eyebrows normal, both eyelashes are symmetrical, the pupil is reacting to light, visual acuity is normal. Right side of lips drooling is present due Due to facial hemiparesis of right side mouth, Patient posture was Slightly slanting towards right side ,difficulty in extension and flexion upper limbs, Numbness present in right hand due paralysis, In the chest, symmetrical no any lesion is present, no axillary lymph node enlargement, S1, and S2 sound are heard pleural effusion absent, In the abdomen, no scarring present on abdomen, spleen or liver, not enlargement, bowel sound present, no fluid collection present.

Diagnostic assessment

Angiography: showing block in the right common carotid artery

MRI-Acute infract in left fronto temporoparietal region involving insular paraventricular white matter absent flow in distal M1 segment of MCA.

HRCT- Revealed normal study of HRCT thorax

CT Brain - Acute to Subacute infarct in left fronto-temporo –parietal region –left MCA territory.

CT Aortogram- Revealed giant cell arteritis (takayasu arteritis)….mild wall thickening noted involving the arch of aorta with extension of the wall thickening along the bilateral subclavian artery common carotid artery, and right ICA. The lumen is significantly narrowed.

Triplex color Doppler study-of bilateral carotid showed complete occlusion of right common carotid artery(approximately 90-95%).

Color Doppler of left upper limb-showed significant narrowing of all the arteritis of left upper limb

Left upper limb angiogram - showed giant cell arteritis non visualization of branches of Arch of aorta with multiple collaterals.(Arch of aorta shows normal contrast opacification. there is non-visualization of right brachiocephalic, bilateral subclavian from its origin and left common carotid with multiple collateral noted).

MEDICAL MANAGEMENT:

Table 1: Following medical management we done in our patient

Name of Medication	**Action**
Tab. Prednisolone , 40 mg, OD, Oral	Decreasing inflammation by suppressing migration of the polymorphonuclear leukocytes
Tab. Pantaprazole , 40mg, BD, Oral	Suppress gastric secretion by dwelling the gastric parietal cell system of potassium ATPs blocks final development of acid
Tab. Ecosprin, 150 mg , OD, Oral	CNS block pain impulses reduce inflammation through prostaglandin synthesis inhibition
Tab. Clopitab, 75mg, OD, Oral	Inhibits first and second phases of ADP-induced effects in platelet aggregation
Tab. Diamox , 250 mg, TDS , Oral	Decrease the eye's aquatic humour by decreasing anhydrase in intraocular pressure
Tab. Dexamethasone , 4mg, TDS , Oral	Reduces inflammation by suppressing leukocyte migration, which reverses capillary permeability
Tab. Perinorm , 10mg, TDS, Oral	Improve tissue acetylcholine Response In upper GI tract, triggering gastric muscle contraction
Inj. Manitol , 100 ml, TDS, IV	There is a reduction in the water absorbance that increases glomerular filtrate osmolarity that increases osmotic fluid pressures in the renal tubules.
Tab. Levetiracetam , 6 mg , BD	Inhibit nerve impulses by limiting the flow of sodium ions across the motor cortex cell membrane.
Syp. Duphalac , 20ml, BD	Prevent ammonia absorption by acidifying stool in colon, increase water, smooth stool.

SURGICAL MANAGEMENT :

In our patient, she and her family member not ready for surgical intervention, so in our not done any surgery**. Following surgeries are very effective for the Takayasu arteritis.**

- **Stenting-** Minor wire mesh coils known as stents can be inserted into the angioplasty field. The stents help to open up the artery so that the vessel does not shrink again.
- **Blood vessel widening (percutaneous angioplasty) -** A small ball is threaded through a blood vessel to the affected artery during this operation. If the balloon is in operation, it is broadened then deflated, and removed. The balloon is extended.
- **Bypass surgery-** The blocked blood flow is removed from the artery or vein from a separate part of the body and fixed onto the blocked artery.

NURSING MANAGEMENT:

- First of all make nursing assessment with the help of observation
- Check the consciousness, weakness, speech, vital sign, the reaction of a pupil, size of a pupil.
- Make the client lie comfortably on the bed.
- Elevate head end of the bed to 30 degree and railing bed is provided.
- Monitor BP.

NURSING DIAGNOSIS:

1. Impaired physical mobility related to hemiparesis
2. Acute pain related to immobilization
3. Deficit self-care related to weakness in right side
4. Impaired verbal communication related to infarct in left front temporal parietal region
5. Risk for impaired skin integrity related to hemiparesis.

1) Impaired physical mobility related to hemiparesis

Interventions

1. Apart from the flexion of the affected ends, apply the splint at night.

2. Prevent the adduction by a pillow in the axilla of the affected shoulder.

3. Elevate the arm to avoid fibrosis and edema.

4. Change position every two hours; placed the patient in a prone position several times a day for 15 to 30 minutes.

2) Acute pain related to immobilization

Interventions

1. Use proper patient movement and positioning.
2. Various motion exercises are advantageous, so avoid exhaustive arm movements.
3. Raise hand and arm to avoid hand-dependent
4. Edema; administration of analgesic agents as directed.

3) Deficient self-care related to weakness in right side

Interventions

1. Encourage the patient to focus on personal hygiene as long as they are available; choose appropriate one-hand self-care activities.
2. Help patients to develop concrete objectives; add a new challenge every day.
3. Initially advise the patient to conduct all unchanged self-care tasks.
4. Ensure that the patient does not ignore the side affected; assist devices given as Stated.

4) Impaired verbal communication related to infarct in left front temporal parietal region

Interventions

1. Ensure good emotional support and empathy to prevent patient sentences.
2. Patient attention, speak slowly and give one instruction at a time while talking to the patient; allow the patient time for processing.
3. Discuss with aphasic patients during social interaction treatment events.

Nutritional Management for Takayasu Arthritis

Patient having Poor appetite, Weight loss and Fatigue so we instruct the patient following things

- Try to eat every 2 hours, High calories, High protein, Physical activities, Non-caffeinated fluids
- Take every 2 hours to eat
- Even just a few bites, Weight loss, Prevention of diabetes mellitus ,Increase gastrointestinal activities

High calories, High protein

- Lentils, legumes, nuts, green peas, quinoa, soy milk, green leafy vegetables, all types of fruits, fish, milk, poultry, chana, paneer, sprout, yogurt, whole grain.

Physical activities

- Increase appetite
- Increase metabolism

We advice the patient about Non-caffeinated beverages

- Caffeinated beverages were grouped into general categories:
- ✓ Coffee, tea, carbonated soft drinks
- Non-caffeinated beverages:
- ✓ Juices, sports drinks, smoothies
- ✓ 8-10 glasses per day

ORGAN SPECIFIC SYMPTOMS

- Sores of the lips
- Diarrhea
- Kidney disorders

Mouth sores

- Vitamin B2: 15mg once a week at 2 weeks interval.
- Bland, soft foods
- Yogurts, canned fruit, mashed potato, jawar, half boiled egg, milkshakes.
- Home remedies: Honey, ice chips, gargling with salt water
- Avoid citrus foods, tomatoes product, Foods based on vinegar, coarse, rough, dry goods (granola or cereal), spicy foods, alcohol content.

Diarrhea

- Choose bananas, apples, white rice, white toast, oatmeal, berries, skinless potatoes and yo ghurt.
- Avoid all grains of bread, cereal or bran food; raw vegetables; fruit skin; dried fruit; pommes of clove skin; oily, grey, fried foods; spicy foods; and extremely rich, swee t desserts.

DRUG INDUCED:

Cytotoxic or immunosuppressive therapies

- Gastric symptoms
- Risk of infection

Immunosuppressant (Corticosteroids)

- Bone loss, high blood pressure, cholesterol, high blood sugar or diabetes and increased a ppetite and weight gain

- osteoporosis
- Vitamin D (400-1000 IU) daily and calcium (1000-1500 mg)

- Calcium sources are healthy foods such as milk, yoghurt, cheese, salmon, almonds and sesame seeds.

- Like fish, milk, eggs and suntan healthy vitamin D sources
- Full grains, beans or legumes, nuts and seeds, good fat, (such as olive and canola oil, nut s and seeds, avocados, fish and seafood), herbs or herbes, and spices are
- all part of anti-inflammatory foods.
- The inflammatory foodstuffs include: sucrose foods (such as soda, pies, candies), refined
- foods, raw white flour foods, red meats, meats processed (such as bacon, hot dogs, delica cies) and high quality foodstuffs from livestock
- (Like full fat dairy products and fatty or fried meats or poultry).

THE DASH stands for Dietary Stop Hypertension Approaches. Diets are straight forward: [2]

- Eat fatty milk products and fruits and vegetables •
- Reduce to moderate saturated fat, cholesterol and trans fat foods [3, 4]
- Consume more meats, fish, poultry and nuts from the whole grain
- Restrict the amount of sodium, candy, sugar and red meats

Psychological aspect on takayasu arteritis

We instructed patient's family members to adopt the Stress management Technique.

Adaptive Coping Strategies

- Awareness , Interpersonal communication with Caring Other, Relaxation ,Meditation Yoga , Sleep, Music therapy ,Pets therapy ,Supportive therapy

Discussion:

A rarity disease with numerous unspecific clinical symptoms can making it difficult to diagnose in their early stages. Takayasu arteritis is a disease of the random type. It is important to look at the effects of delayed diagnosis in those women with a history of weakness and exhaustion and malaise. In present case also patient having similar complaint so we need early prevention, proper diagnostic procedure and good surgical intervention. A 104 patient research Italian Via an ad hoc form, data have been obtained. The study included demographic data, clinical history, vascular observations, treatment, risk factors and comorbidities. Outcome: Data were obtained in 104 patients. Diagnosis delays of 15.5 months (range from 0-325 months) were median. At starting <15 years age had a higher probability of delay in diagnosis while a lower probability of higher erythrocyte sedimentation rate. Most patients had unspecific signs and symptoms that suggested an early phase of inflammatory disease. Stenosis, the most prevalent lesion, was present in 93 per cent of patients among vascular involvement. This also concluded that delayed

diagnosis is a key problem for patients with TA, similar to many rare diseases. Present care is being questioned about the long-term efficacy of vascular lesions and their development. [5] Studies on global burden of diseases[6-8] and diseases of different arteries[9-10] were reviewed[11-14].

Conclusion:

The most frequently involved arteries and the angiographic trends in this Takayasu Arteritis study were subclavian arteries and carotid arteries. The difference between angiographic characteristics may lead to clinical differences. Operations and surgery should be carried out at various points in the course of the disease.

Informed Consent

Patient informed consent was taken and signed by the Patient before writing a case report.

Ethical approval

IEC-DMIMS Wardha.

REFFERANCE

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