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A CASE OF RECURRENT CVA DUE TO INFECTIVE ENDOCARDITIS

General Medicine

Dr Amandeep Singh Kaloti Professor Medicine.

ABSTRACT

Infective endocarditis is an infection of the inner surface of the heart, usually the valves. Symptoms may include fever, small areas of bleeding into the skin, heart murmur, feeling tired, and low red blood cell count. Complications may include valvular insufficiency, heart failure, stroke, and kidney failure. Here I present a case of patient who was having fever for the past 6 months and recurrent strokes. She was found to have infective endocarditis. The treatment was started and she responded to a course of antibiotics.

KEYWORDS

INTRODUCTION:-

The cause is typically a bacterial infection and less commonly a fungal infection. Risk factors include valvular heart disease including rheumatic disease, congenital heart disease, artificial valves, hemodialysis, intravenous drug use, and electronic pacemakers. The bacteria most commonly involved are streptococci or staphylococci. Diagnosis is suspected based on symptoms and supported by blood cultures or ultrasound. There is also a noninfective form of endocarditis.

The usefulness of antibiotics following dental procedures for prevention is unclear. Some recommend them in those at high risk. Treatment is generally with intravenous antibiotics. The choice of antibiotics is based on results of blood cultures. Occasionally heart surgery is required.[1]

Staphylococcus aureus followed by *Streptococci* of the viridans group and coagulase negative Staphylococci are the three most common organisms responsible for infective endocarditis. Risk factors for infective endocarditis are based on the premise that in a healthy individual, bacteremia (bacteria entering the blood stream) is cleared quickly with no adverse consequences. However, if a heart valve is damaged, the bacteria can attach themselves to the valve, resulting in infective endocarditis. Additionally, in individuals with weakened immune systems, the concentration of bacteria in the blood can reach levels high enough to increase the probability that some will attach to the valve. Some significant risk factors are listed here:

1. Artificial heart valves
2. Intracardiac devices, such as implantable cardioverter-defibrillators
3. Unrepaired cyanotic congenital heart defects
4. History of infective endocarditis
5. Chronic rheumatic heart disease, which is an autoimmune response to repeated *Streptococcus pyogenes* infection
6. Age-related degenerative valvular lesions
7. Hemodialysis, a medical procedure that filters the blood of individuals with kidney failure
8. Coexisting conditions, especially ones that suppress immunity. Diabetes mellitus, alcohol abuse, HIV/AIDS, and intravenous drug use all fall in this category

The transthoracic echocardiogram has a sensitivity and specificity of approximately 65% and 95% if the echocardiographer believes there is 'probable' or 'almost certain' evidence of endocarditis.[2]

Case Report:-

The patient was a female aged 26 yrs old, unmarried, and was admitted with chief complaints of-

- Fever for the past 06 months
- Recurrent right sided weakness for 06 months.
- Generalized weakness for the past 06 months
- Patient complained of fever for the past 6 months before admission, which was of moderate grade, continuous, no diurnal variation, was associated with chills to start with but not later. There was an asso history of weight loss.

Patient also gave history of weakness in the right half of the body which had been present off and on for the past 6 months. Patient had experienced weakness in the right half of the body 6 months back which had recovered partially. But he had repeated attacks of weakness later on till then. The present episode of weakness happened few weeks before admission and had partially recovered since then.

Patient also complained of generalized weakness due to the illness and was not able to do her routine activities due to the illness.There was no history of any cough, haemoptysis, melaena.

There was no history of palpitations, dyspnoea on exention, or PND.

There was no past history of similar complaints prior to 6 months before presentation. There was no history of diabetes mellitus, hypertension, coronary artery disease, tuberculosis. Patient had been on treatment for the complaints off and on in the past 6 months. There was no family history of diabetes mellitus, hypertension, coronary artery disease. There was a personal history of patient being vegetarian, no addictions, bowel and bladder were normal.

On general physical examination, the patient was conscious, lying in the bed. General condition of the patient was not satisfactory. Patient was febrile (Temp 102^{0}F).

Pulse rate was 110 /min, regular, good volume, all PPWF, No radiofemoral delay, condition of vessel wall normal, normal character, equal both sides. The respiratory rate was 22/min, thoracoabdominal in nature. The BP was 110/70 mmHg, right arm, supine. Pallor was present, clubbing was present, no cyanosis, icterus, lymphadenopathy or edema. JVP was not raised. On CVS examination, S1 was loud, P2 normal, Pansystolic murmur and early diastolic murmur were present. On respiratory system examination, bilateral crepitations were present. On per abdomen examination, liver was just palpable. On CNS examination, patient was conscious, oriented.

Right VII CN palsy of UMN type was present.
Right sided weakness was present, power grade III.
DTRs were exaggerated on the right side.
Plantars were bilateral flexor, sensory system was normal.
There was no neck stiffness.
Spine was normal.

Patient had come in a poor general condition with a history of fever for the past 6 months prior to admission and had been taking symptomatic treatment from GPs off and on. But the symptoms of the patient had persisted for so long and had not been diagnosed.

On Investigation :-

CBC :- Hb :- 6.8 gm %	Viral Markers:- Negative
TLC :- 10,500/mm3	RBS:- 140 mg%
Polys- 67%	
MCV :- 59	Urine Exam- normal
Sr. AST/ALT :- 68/58 IU/L	ECG:- sinus tachycardia
Sr. Albumin :- 2.9 gm%	
Alk P:- 105IU/L	CXR(PA):- cardiomegaly
GGT :- 173	

Bl Urea :- 20 mg%
Sr. Creatinine: 1mg%
Sr. Uric Acid : 11.6 mg%
Sr. Calcium : 7.5 mg% Blood Culture- Growth of Staph.aureus
FLP- normal

ESR :- 120 mm Ist hr
USG Abdomen: normal

Echo:- oscillating para-valvular mass oscillating - s/o vegetation, moderate MR , moderate AR.

MRI Brain:- The patient was found to have a non-haemorrhagic infarct in the left MCA territory.

The patient was found to have infective endocarditis and had valvular regurgitations. She also had recurrent episodes of CVAs due to embolization from the vegetations. The patient was started on treatment and was given antibiotics and other treatment like-

Inj Frusemide 20 mg iv od
Inj Ceftriaxone 2 gm iv bd
Inj Amikacin 500 mg iv bd
Inj Vancomycin 500 mg iv bd
Inj Pantoprazole 40 mg iv od
Tab Ecosprin 150 mg od
Tab Atorvastatin 10 mg hs
Inj Emeset 4 mg iv bd
Inj PCM infusion sos

The patient was treated in the ICU initially and as the patient improved with the treatment given, she was shifted to the ward and later on discharged in good general health.

DISCUSSION:-

Established in 1994 by the Duke Endocarditis Service and revised in 2000, the Duke criteria are a collection of major and minor criteria used to establish a diagnosis of infective endocarditis. According to the Duke criteria, diagnosis of infective endocarditis can be definite, possible, or rejected. A diagnosis of infective endocarditis is definite if either the following pathological or clinical criteria are met:

1. One of these pathological criteria:
- Histology or culture of a cardiac vegetation, an embolized vegetation, or intracardiac abscess from the heart finds microorganisms
- Active endocarditis

2. One of these combinations of clinical criteria
- 2 major clinical criteria
- 1 major and 3 minor criteria
- 5 minor criteria.3

Diagnosis of infective endocarditis is possible if one of the following combinations of clinical criteria are met:
- 1 major and 1 minor criteria
- 3 minor criteria are fulfilled

Major criteria

1. Positive blood culture with typical IE microorganism, defined as one of the following:
- Typical microorganism consistent with IE from 2 separate blood cultures, as noted below:
- Viridans-group streptococci, or
- Streptococcus bovis including nutritional variant strains, or
- HACEK group, or
- Staphylococcus aureus, or
- Community-acquired Enterococci, in the absence of a primary focus
- Microorganisms consistent with IE from persistently positive blood cultures defined as:
- Two positive cultures of blood samples drawn >12 hours apart, or
- All of 3 or a majority of 4 separate cultures of blood (with first and last sample drawn 1 hour apart)
- Coxiella burnetii detected by at least one positive blood culture or IgG antibody titer for Q fever phase 1 antigen >1:800. This was previously a minor criterion

2. Evidence of endocardial involvement with positive echocardiogram defined as
- Oscillating intracardiac mass on valve or supporting structures, in the path of regurgitant jets, or on implanted material in the absence of an alternative anatomic explanation, or
- Abscess, or
- New partial dehiscence of prosthetic valve or new valvular regurgitation (worsening or changing of preexisting murmur not sufficient).

Minor criteria

1. Predisposing factor: known cardiac lesion, recreational drug injection
2. Fever >38 °C
3. Embolism evidence: arterial emboli, pulmonary infarcts, Janeway lesions, conjunctival hemorrhage
4. Immunological problems: glomerulonephritis, Osler's nodes, Roth's spots, Rheumatoid factor
5. Microbiologic evidence: Positive blood culture (that doesn't meet a major criterion) or serologic evidence of infection with organism consistent with IE but not satisfying major criterion
6. Positive echocardiogram (that doesn't meet a major criterion) (this criterion has been removed from the modified Duke criteria).[4]

CONCLUSION:-

Infective endocarditis can have many complications. One of this is the stroke which can be recurrent as in this case. Untill and unless the condition is recognised, the patient usually has a downhill course. So to prevent the complications from occuring, early diagnosis should be made.

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