Case Report

Unusual case of acute coronary syndrome: inferior wall myocardial infarction 19 years young male presented with fever and right ankle cellulites treated with tissue plasminogen activator and its out come

Dipesh S. Patel¹*, V. K. Das², Keyur Desai¹

¹Department of Medicine, Shri Vinoba Bhave Civil Hospital, Union Territory, Dadra and Nagar Haveli, India
²Director Health and Medical Science Union Territory, Dadra and Nagar Haveli, Daman-Diu, India

Received: 04 February 2017
Accepted: 02 March 2017

*Correspondence to:
Dr. Dipesh S. Patel,
Email: drdipesh1984@gmail.com

ABSTRACT

Unusual case of acute coronary syndrome: inferior wall myocardial infarction in 19yrs young male patient presented with fever and right ankle cellulites with fungal infection, thrombolysis was done with injection tenectaplas a newer tissue plasminogen activator with Troponin-T positive. Tenectaplas drug showed ECG changes within 30 minutes of thrombolysis with normal coronary during the angiography and preserved the left ventricular ejection function making it a successful thrombolysis by the tissue plasminogen activator (TPA) in young patient with myocardial infarction.

Keywords: Tissue plasminogen activator, 19 years young myocardial infarction

INTRODUCTION

As myocardial infarction we know is fatal to life which ever age group we observe, normally we have observed myocardial infarction in age group more than 40years but myocardial infarction in young age less than or equal to 19 years¹ is not commonly seen in routine practice. The most common reason of young myocardial infarction is the hypercoagulable states like antiphospholipid syndrome, systemic lupus erythematosus, nephrotic syndrome, anti-thrombin III etc. Here in this case study we have discussed the young patient of 19 years of age having inferior wall myocardial infarction with cellulites and after the thrombolysis with tissue plasminogen activator the patient had normal coronary angiography and preserved left ventricular function.

CASE REPORT

A 19 years Young male patient was brought in the emergency room to Shri Vinoba Bhave Civil Hospital, U.T of Dadra and Nagar Haveli with complain of right ankle cellulites and fever with chills from 4 days¹.²

Patient was asymptomatic before 4 days than he
developed itching over the right ankle after itching there was redness over the area after 1 day of itching and redness patient observed swelling over the right leg for which patient visited some general clinic and took some medicine to subside the redness and swelling. But after 3 days patient had discharge from the site and fever, patient had taken some anti-pyretic for fever, but fever did not became normal after taking the drugs and there was discharge from the local site. So patient visited Shri Vinoba Bhave Civil Hospital at the emergency room at night 8:35pm and was examined and has advice to get admitted for the complaint. Patient was admitted and primary treatment was given and was shifted to ward, patient was conscious, oriented and vitally stable when he was admitted. In morning after having morning breakfast he felt chest pain and heaviness on the left side of the chest the pain was non-radiating in nature and was localised to the left chest wall. Immediately the ECG was taken and it was suggestive of ST elevation inferior wall myocardial ischemia, patient was shifted to ICU and patient’s relatives were counselled about the myocardial ischemia and about the thrombolysis. Vitally patient was normal but there was temperature of about 101.3°F which is mention in Table 1. Laboratory investigations were performed and they are listed in Table 2.

**Table 1: General examination/ systemic examination/ vitals of the patient at the time of presentation in the hospital.**

| Pallor/Cyanosis/Icterus/Clubbing/Edema/Lymph node | Normal |
|-------------------------------------------------|--------|
| Inspection                                      | Normal |
| Palpation                                       | Normal |
| Percussion                                      | Normal |
| auscultation                                    | Normal |
| temperature                                     | 101.3°F |
| Pulse                                           | 96/min in right radial artery in supine position |
| BP                                              | 130/90mmhg in right radial artery in supine position |
| Respiratory rate                                | 18/min abdominal thoracic type of normal respiration |
| Respiratory sound                               | NVBS   |
| Cardiovascular sound                            | S1S2 present with no murmur |
| Spo2                                            | 96% with room air |
| P/A examination                                 | NAD    |
| Respiratory/Cardiovascular/GI system/Gentourinary/Central nervous system | Normal |

**Other laboratory test rather than in Table 1:**

- Coronary angiography (CAG): normal coronaries.
- Homocystine level: 40.8μmol/L
- Colour Doppler study venous system right lower limb: Impression-no evidence of deep vein thrombosis. Subcutaneous edema is seen in lower leg. No obvious collection seen. A 4.3x3.0x0.9cm sized anechoic collection is seen deep to the musculotendous plan on dorsal aspect of foot. It appears to be communicating with ankle joint. This is likely to be synovial collection.
- Antiphospholipid antibody: Negative.

| Test                 | Values         | Normal range            |
|----------------------|----------------|-------------------------|
| Hb (gm%)             | 13.2gm%        | 13-17gm%                |
| Total leucocytes count | 18,000/cumm   | 4-10x10³/µl             |
| Polymorphs           | 90%            |                         |
| Lymphocytes          | 07%            | 25-55%                  |
| Eosinophil           | 02%            | 1-6%                    |
| Monocytes            | 01%            | 2-10%                   |
| Basophils            | 00%            | 0-2%                    |
| RBC                  | 4.5million/mm³ | 4.5-5.5million/mm³      |
| PCV                  | 38.5%          | 40-50%                  |
| MCH                  | 39.0pq         | 27-32pq                 |
| MCHC                 | 34.3g/dl       | 31.5-34.5g/dl           |
| Platelet count       | 2.05lakh/mm³   | 1.5-4lakh/mm³           |
| HIV                  | Negative       |                         |
| HbsAg                | Negative       |                         |
| Blood group          | A positive     |                         |
| RBS (random blood sugar) | 102mg/dl     |                         |
| Serum electrolyte    |                |                         |
| Sr. sodium           | 128.5m.mol/L   | 136-146m.mol/L          |
| Sr. potassium        | 3.76m.mol/L    | 3.5-5.5m.mol/L          |
| Sr. chloride         | 100.5m.mol/L   | 98-106m.mol/L           |
| Blood urea nitrogen  | 14mg/dl        | 7.9-20mg/dl             |
| Serum creatinine     | 1.35mg/dl      | 0.6-1.1mg/dl            |
| Liver function test  | Normal         |                         |
| Lipid profile        | Normal         |                         |
| PT with INR          | Normal         |                         |
| CPK-MB               | 104 U/L        |                         |
| Troponin-T (by card) | Positive       |                         |

**Table 2: Laboratory data of the patient during the hospital stay.**
which we can see in Table 3 and after the thrombolysis the ECG was again repeated which can be seen in Figure-2 respectively. In Figure 2 which is the post thrombolysis ECG there is marked changes noted from Figure 1.

So the timing of the thrombolysis and its potency of the drug can also be notice in the given figure. There were many question about that it can also be diagnosed as myopericarditis, but in myopericarditis the ECG changes mainly the ST-T will have been slow and not within the short duration as show in figures. In our study the changes were seen within 30 minutes of the thrombolysis. As by the symptoms wise the chest pain in myopericarditis will decrease slowly and steady as in our case the chest pain was relieved within 15 minutes so the diagnosis of acute coronary syndrome-ST elevation inferior wall myocardial infarction was kept and not myopericarditis. There was a successful thrombolysis done with the tissue plasminogen agent which was tenectaplace which we used during the episode as it showed an accurate result in a young patient of myocardial infarction where the left ventricle ejection function was also preserved and the coronary angiography also normal during the study.11,12 Hence, the complain to needle time is early there are result suggestive of better outcome.13

CONCLUSION

To conclude, the use of tissue plasminogen activator like tenectaplace in a young myocardial infarction with ECG suggestive of myocardial infarction will give a good result and proper outcome in whom the symptoms to needle time is early.

But the etiological factor was very difficult to know, but in our case study we can assume that the cellulites with fungal infection were the etiological factor for the myocardial infarction to occur.

Figure 1: 12 lead ECG taken of the patient during the episode of chest pain which was suggestive of inferior wall myocardial infarction and reciprocal changes were noted in anterior chest lead.

Table 3: Treatment data given during the hospital stay.

| Drug given       | Route of administration |
|------------------|-------------------------|
| 1 Inj augmentin (1.2gm) | IV TDS |
| 2 Inj Amikacin (500)  | IV BD |
| 3 Inj tenectaplace  | IV Bolus over 5sec stat. |
| 4 Inj LMWH (0.6)    | S/C BD |
| 5 Inj Pantoprazole (40mg) | IV BD |
| 6 Inj Emset (2ml)    | IV TDS |
| 7 Tab. Disprin (350) 1 stat Tab. Clopitab (75mg) 4 stat Tab Atorvastatin (40mg) 2 stat |
| 8 Tab. Clopitab AP (75/150) | 1 OD |
| 9 Tab. Atorvastatin (40mg) | 1 HS |
| 10 Tab. Homoccheck  | 1 OD |
| 11 Tab. Betaloc (25mg) | 1 OD |
| 12 Tab Alprazolam (0.5mg) | IHS |
| 13 Tab phlogam       | 1 TDS |
| 14 Liq Cremaffin 15 ml HS with water |
| 15 MgSO₄ dressing    | Daily |
Figure 2: 12 lead ECG taken after 30 minutes of the thrombolysis with tissue plasminogen activator showing decrease in ST elevation in inferior lead which was seen in figure 1 and disappearance of the reciprocal changes noted in anterior chest lead.

Funding: No funding sources  
Conflict of interest: None declared  
Ethical approval: Not required

REFERENCES

1. Yater WM, Traum AH, Brown WG, Fitzgerald RP, Geisler MA, Wilcox BB. Coronary artery disease in men 18 to 39 years of age. Am Heart J. 1948;36:334-8.
2. Jalowiec DA, Hill JA. Myocardial infarction in the young and in women. Cardiovascular Clini. 1989;20:197-206.
3. Cheitlin MD, McAllister LA, de Castro CM. Myocardial infarction without atherosclerosis. JAMA. 1975;231:951-9.
4. Welch GN, Loscalzo J. Homocystine and atherothrombosis. NEJM. 1998;338:1042-50.
5. Nygard O, Nordrehaug JE, Refsum H, Ueland PM, Farstad M, Vollset SE. Plasma Homocystine levels and mortality in patients with coronary artery disease. NEJM. 1997;337:230-6.
6. Vaarala O. Antiphospholipid antibodies and atherosclerosis. Lupus. 19965;442-7.
7. Harats D, George J, Levy Y, Khamashta MA, Hughes GR, Shoenfeld Y. Atheroma: links with antiphospholipid antibodies, Hughes syndrome and lupus. Qjm. 1999;92(1):57-9.
8. Jouhikainen T, Pohjola-Sintonen S, Stephansson E. Lupus anticoagulant and cardiac manifestation in systemic lupus erythematosus. Lupus. 1994;3:167.
9. Zimmerman FH, Cameron A, Fisher LD, Ng G. Myocardial infarction in young adults (angiographic characterization, risk factors and prognosis). (Coronary Artery Surgery Registry). J Am Coll Cardiol. 1995;26:654-61.
10. Hamsten A, Wiman B, de Faire U, Blomback M. Increased plasma levels of a rapid inhibitor of tissue plasminogen activator in young survivors of myocardial infarction. NEJM. 1985;313:1557.
11. Chesler E, Matsiin RE, Lakier JB, Pocock WA, Obel, I.W., Barlow, J.B. Acute myocardial infarction with normal coronary arteries (a possible manifestation of the billowing mitral leaflet syndrome). Circulation. 1976;54:203-9.
12. Fournier JA, Sanchez-Gonzalez A, Quero J, Cortacero JA, Cabello A, Revello A, et al. Normal angiogram after myocardial infarction in young patients: A prospective clinical-angiographic and long-term follow-up study. Int J Cardiol. 1997;60(3):281-7.
13. Holmes DR, White HD, Pieper KS, Ellis SG, Califf RM, Topol EJ. Effect of age on outcome with primary angioplasty versus thrombolysis. J Am College of Cardiol. 1999;33(2):412-9.

Cite this article as: Patel DS, Das VK, Desai K. Unusual case of acute coronary syndrome: inferior wall myocardial infarction 19 years young male presented with fever and right ankle cellulites treated with tissue plasminogen activator and its out come. Int J Basic Clin Pharmacol 2017;6:1014-7.