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Late Controlled Type 2 Diabetes Mellitus With Severe Acute Systemic Infection

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ABSTRACT

Background: The last International Diabetes Federation statement showed that in 2015, there were 415 million people diagnosed with diabetes and the expectation for 2040 is around 642 million people all over the world. Diabetes Mellitus is a disease associated with major negative consequences due to its acute and chronic complications with chronic hyperglycemia playing a major role.

Method: We are presenting a case of 52 year old male patient, known with Type 2 Diabetes Mellitus for 10 years without treatment due to personal decision, who was admitted through the Emergency Unit in Neurology Department for bilateral myalgia of hips and arms, proximal force deficiency of bilateral lower limbs, acute retention of urine, fever, symptomatology which started about 48 before admission. The suspected diagnosis was acute polyradiculoneuritis but the paraclinical investigations performed on Neurology Unit excluded it and evaluated the present disease as Acute Diabetic Neuropathy. Through the passing days, the patient developed paraplegia and major unbalanced glycemic control (although he received multiple rapid human subcutaneous insulin injection) so they've decided to transfer him into Diabetology Department. At the moment of admission into Diabetology Unit, the patient had high fever, superficial and deep sensitivity disorders, urethral catheter and no faeces for 7 days.

We've continued our investigations and came with a positive diagnosis of Unbalanced and Complicated Type 2 Diabetes Mellitus with insulin therapy, Parainfectious Acute Transverse Myelitis, Prostatic and Seminal Vesicles Abscess with rectal fistula, Sepsis, Acute Retention of Urine, Urinary Infection with *Pseudomonas Aeruginosa*.

Conclusion: The diagnosis of Unbalanced Diabetes Mellitus involves differential diagnosis due to lack of specific symptomatology in Diabetic Neuropathy and associated immune deficiency.

Keywords: Diabetes Mellitus, Infectious Complications, Diabetic Neuropathy, Immune Deficiency

Background

The last IDF statement showed that in 2015, there were 415 million people diagnosed with diabetes and the expectation for 2040 is around 642 million people all over the world. It means that 1 of 11 adults has Diabetes Mellitus and 12% of health expenditure is spent on this disease [1].

Diabetes Mellitus is a disease associated with major negative consequences due to its acute and chronic complications with chronic hyperglycemia playing a major role [2]. Prolonged unbalanced control facilitates infections (decreased function of monocytes and macrophages) and infections associate difficult control of hyperglycemia (increased secretion of up regulation hormones with higher gluconeogenesis and insulin secretion inhibition) [3].

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In front of a patient caught on a vicious circle, the diabetologist plays a major role on case management.

Case report:

A 52 year old male patient, known with Type 2 Diabetes Mellitus for 10 years without treatment due to personal decision, it is admitted through the Emergency Unit in Neurology Department for bilateral myalgia of hips and arms, proximal force deficiency of bilateral lower limbs, acute retention of urine, fever, symptomatology which started about 48 before admission.

The history of the present disease started twelve days ago when the patient complained of fever followed after 2 days by micturition and bowel disorders. The General Practitioner recommended an urologic examination which discovered a prostatic mass by digital rectal examination.

Physical examination revealed symmetrical face, normal movements of both eyes, no nystagmus, severe proximal force deficiency on both lower limbs, absent tendon reflexes, Babinski sign positive, no signs of meningeal irritation or superficial sensitivity deficiency, urethral catheter.

Taking into account the anamnesis and physical examination, the suspected diagnosis was acute polyradiculoneuritis [5].

The paraclinical investigations showed major neutrophilic leukocytosis and inflammatory syndrome, severe hyperglycemia and pathological urinary sample- leukocyturia, glycosuria, ketonuria, hematuria. The cerebrospinal fluid analysis revealed the presence of glucose (195 mg/dl), albumine (120 mg/dl), chloride (117mmol/l) and 7 elements/mm³ (88% neutrophils, 12 monocytes) with negative culture. The brain CT scan didn't diagnosed acute ischemic or hemorrhage events and intra/extra cerebral tumors. The Infectious Disease Examination excluded acute meningitis.

Through the passing days, he developed

paraplegia and major unbalanced glycemic control although he received multiple rapid human subcutaneous insulin injection. The neurologist excluded polyradiculoneuritis, evaluated the present disease as Acute Diabetic Neuropathy and decided to transfer him into Diabetology Department.

At the moment of admission into Diabetology Unit, the patient had high fever, superficial and deep sensitivity disorders, urethral catheter and no feces for 7 days.

We've performed culture of urine and blood with positive results for *Pseudomonas aeruginosa* in urine and *Staphylococcus aureus* in blood.

Taking into account our anamnesis, physical examination and paraclinical investigations, we've suspected Parainfectious Acute Transverse Myelitis and we've initiated continuous intravenous infusion multiple antibiotic therapy (Colistin, Metronidazol and Ciprofloxacin). associated with insulin therapy

We've continued our investigations and the urological examination diagnosed prostatic hypertrophy with minimal arterial intrarectal bleeding. The rectosigmoidoscopy showed ulcerative tumor with fistula traject 10 cm above the anus. The MRI of pelvis and vertebral spine confirmed emphysematous prostatic and seminal vesicles abces with fistula into rectum, protrusion of L3-L4, L4-L5, L5-S1 vertebral disc without conflicts. According to studies, normal aspect of vertebral spine MRI do not exclude the Acute Transverse Myelitis [3].

After 3 weeks of intensive antibiotherapy and insulin therapy, we had good evolution with remission of fever, restoration of sensitivity, normal limbs movement and sphincter control with spontaneous micturition after detachment of urethral catheter.

Taking into account all of the above, we can conclude with a positive diagnosis for this case: unbalanced and complicated Type 2 Diabetes Mellitus with insulin therapy, Parainfectious Acute Transverse Myelitis, Prostatic and Seminal Vesicles Abces with rectal fistula, Sepsis, Acute Retention of Urine, Urinal Infection with *Pseudomonas Aeruginosa*.

The case requires a differential diagnosis with:

- Acute Polyradiculoneuritis : no albumin cytology dissociation;
- Acute Meningitis: excluded by cerebrospinal fluid examination;

- Acute Cerebral Stroke: excluded by CT scan;
- Primary and Secondary vertebral Tumor: excluded by MRI
- Spondylodiscitis (excluded by MRI)
- Hyperalgetic Diabetic Neuropathy (no simptomatology)

Discussions:

Early diagnosis of type 2 Diabetes Mellitus plays a major role in prevention of chronic complication known as risk factor for acute severe complications. It is important to evaluate correctly the metabolic control in order to achieve the targets for decreasing the risk factor for infections. The lack of clinical findings, like in neuropathy [6, 7, 8], could disturb medical judgement leading to wrong diagnosis and improper evaluation of life risk [1].

This case emphasizes the potential for severe infectious complication associated with chronic hyperglycemia and neuropathy proves that the management of diabetic patient is a challenge in which multidisciplinary approach is essential [2, 9].

Conclusion

The diagnosis of Unbalanced Diabetes Mellitus involves differential diagnosis due to lack of specific symptomatology in Diabetic Neuropathy and associated immune deficiency.

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