

Coincidence of Cystic Fibrosis in Mother and her Child Related to Infertility

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Abstract

Cystic fibrosis (CF), the most common life-shortening, hereditary disease in whites, manifests itself principally in childhood. Patients presenting with CF as adults appear to be different when compared to patients diagnosed with CF during childhood. Often these patients have been previously diagnosed with asthma, chronic bronchitis or emphysema.

We present a case of a woman diagnosed with CF at age 37 years. We noticed her finger clubbing during her son's hospital admission for CF decompensation. Taking a thorough history, she complained of chronic productive cough and was treated for hyper reactive airway disease for many years. A Computed Tomography scan was performed which showed bronchiectasis, atelectasis and the presence of a honey comb pattern in her lung fields. Two sweat tests were performed, both of which were strongly positive. Her CF diagnosis was confirmed.

The clinical course of patients receiving a diagnosis of CF in adulthood is largely unknown, but frequently they have milder disease and a more favorable prognosis. The proportion and number of patients with CF diagnosed in adulthood has increased. A large number of these patients present with subtle symptoms or single-organ disease. Since the majority have pulmonary disease CF should be included in the differential diagnosis of chronic respiratory symptoms in adults.

Keywords: Cystic Fibrosis, Clubbing, Infertility, Pregnancy

Introduction

Cystic fibrosis (CF), the most common life-shortening, hereditary disease in whites, is described as a disease that manifests itself principally in childhood. It is documented that patients presenting with CF in adulthood appear to be different when compared to patients presenting in childhood. They tend to have more subtle findings and traditional sweat test results may not be positive (1).

Clinical features that lead to the diagnosis include respiratory symptoms and chronic airway infection with typical CF pathogens such as *Pseudomonas aeruginosa*, *Staphylococcus aureus* as well as nontuberculous mycobacteria. Often these patients have formerly received a diagnosis of either asthma, chronic bronchitis, or emphysema. Pancreatic insufficiency is much less common in adults diagnosed with CF, but pancreatitis occurs with greater frequency. Although lung disease is generally less severe in CF patients diagnosed as adults than in adult patients who have been diagnosed as infants, the extent of bronchiectasis can nonetheless be severe (2, 3).

CF is a genetic recessive disorder caused by muta-

tions in the gene that encodes the CFTR protein. The diagnosis of CF in adults should be based on the presence of one or more characteristic clinical features, a history of CF in a sibling; plus evidence of defective CFTR function, as documented by elevated sweat chloride concentrations or abnormal ion transport across the nasal epithelium, or identification of mutations on both CFTR genes (4).

Case Report

We present the case of a woman diagnosed with CF at age 37 years. An 8 year-old male, who was a known to have CF, [confirming positive sweat test (Na=60 mEq/L, Cl=75 mEq/L, volume: 120)], since early infancy taking Creon capsules and vitamin supplements] was admitted to our hospital. During his admission, due to respiratory decompensation, we noticed his mother's fingers were clubbed. She was a 37 year old lady in no apparent distress. Taking a thorough history, she complained of chronic productive cough and was treated for hyper reactive airway disease for many years. While taking drugs for her presumed

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negative for fat. As an adult diagnosed with CF, it was predictable not to have pancreatic insufficiency but she also had no episode of pancreatitis, which is more common in this age group.

Women with CF have diminished fertility and pregnancy may be a threat to their health, especially when they have compromised lung function (11). Our patient was a case of 12 years infertility before giving birth to her CF child; her unexplained infertility could have been a clue for an earlier diagnosis of CF but it remained unnoticed?.

The sweat test remains the hallmark diagnostic test for CF (12). The quantitative pilocarpine iontophoresis sweat test developed by Gibson and Cooke remains the test of choice (13). An accurately performed sweat test has a high diagnostic yield. A sweat chloride concentration of > 60 mEq/L confirms the diagnosis of CF in patients with suggestive clinical symptoms (9). We recommend repeated sweat tests when borderline values are obtained. If there is a strong clinical suspicion of CF, normal or intermediate values do not exclude a diagnosis of CF, especially in older people (14). It is documented that adult patients diagnosed with CF most probably have equivocal sweat test results, but our patient's test result is strongly positive.

The proportion and number of patients with CF diagnosed in adulthood have increased. A large number of these patients present with subtle symptoms or single-organ disease. The majority have pulmonary disease. CF can affect multiple organs, and there is a potential for future complications, which could be anticipated or treated earlier with a confirmed diagnosis. Patients with CF diagnosed as adults should be informed that they are different from patients diagnosed in childhood. (1).

Clinicians must be aware of the potential for adults with chronic respiratory tract infections, unexplained bronchiectasis, congenital bilateral absence of the vas deferens, or pancreatitis to have CF despite the age at presentation (2, 3).

Conclusion

CF should be included into the differential diagnosis of chronic respiratory symptoms in adults. CF patients diagnosed in adulthood usually have a

milder clinical course of the disease.

References

1. Gilljam M, Ellis L, Corey M, Zielenski J, Durie P, Tullis DE. Clinical Manifestations of Cystic Fibrosis Among Patients With Diagnosis in Adulthood. *Chest*. 2004; 126: 1215-1224.
2. Nick JA, Rodman DM. Manifestations of cystic fibrosis diagnosed in adulthood. *Curr Opin Pulm Med*. 2005 Nov; 11(6): 513-518.
3. de Gracia J, Alvarez A, Mata F, Guarner L, Vendrell M, Gadtner S, et al. Cystic fibrosis in adults: study of 111 patients. *Med Clin (Barc)*. 2002; 119(16): 605-609.
4. Chinet T, Fajac I, Ferec C, Garcia Carmona T, Nguyen-Khoa T. Diagnosis of cystic fibrosis in adults. *Rev Mal Respir*. 2000; 17(3 Pt 2):739-748.
5. Cohen LF, di Sant'Agnese PA, Friedlander J. Cystic fibrosis and pregnancy, A national survey. *Lancet*. 1980; 2(8199): 842-844.
6. Barak A, Dulitzki M, Efrati O, Augarten A, Szeinberg A, Reichert N, et al. Pregnancies in women with cystic fibrosis. *Isr Med Assoc J*. 2005; 7(2): 95-98.
7. Mushtaq J, Wright VM, Drake DP, Meams MB, Wood CB. Meconium ileus secondary to cystic fibrosis. The East London experience. *Pediatr Surg Int*. 1998; 13: 365-369.
8. Lai HJ, Cheng Y, Farrel PM. The survival advantage of patients with cystic fibrosis diagnosed through neonatal screening: evidence from the United States Cystic Fibrosis Foundation registry data. *J Pediatr*. 2005; 147: 57-63.
9. De Boeck K. Diagnostic procedures, clinical characteristics and counseling in cystic fibrosis. *Ann Nestle [Engl]*. 2006; 64: 119-129.
10. De Boeck K, Weren M, Proesmans M, Kerem E. Pancreatitis among patients with cystic fibrosis: correlation with pancreatic status and genotype. *Pediatrics*. 2005; 115: 463-469.
11. Edenborough FP, Stableforth DE, Webb AK, Mackenzie WE, Smith DL. Outcome of pregnancy in women with cystic fibrosis. *Thorax*. 1995; 50: 170-174.
12. LeGrys, V Assessment of sweat-testing practices for the diagnosis of cystic fibrosis. *Arch Pathol Lab Med*. 2001; 125, 1420-1424.
13. Gibson LE, Cooke RE. A test for concentration of electrolytes in sweat in cystic fibrosis of the pancreas utilizing pilocarpine by iontophoresis. *Pediatrics*. 1959; 23: 545-549.
14. Stewart B, Zabner J, Shuber A, Welsh MJ, McCray PB Jr. Normal sweat chloride values do not exclude the diagnosis of cystic fibrosis. *Am J Respir Crit Care Med*. 1995; 151: 899-903.