

APPLICATION OF THE VIRTUAL BRONCHOSCOPY IN CHILDREN WITH SUSPECTED ASPIRATION OF THE FOREIGN BODY – CASE REPORT

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PRIMENA VIRTUALNE BRONHOSKOPIJE KOD DECE POD SUMNJOM NA ASPIRACIJU STRANOG TELA – PRIKAZ SLUČAJA

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ABSTRACT

In diagnosing the aspiration of the foreign body (AFB) in children most important are: medical history, clinical signs and positive radiography of the lungs. Common dilemmas in the differential diagnosis are life-threatening asthma attacks or difficult pneumonia. Conventional rigid bronchoscopy (RB) is not recommended as a routine method. Virtual bronchoscopy (VB) can be a diagnostic tool for solving dilemmas. Fiber-optic bronchoscopy (FOB) has a therapeutic stake in severe cases. Herein, we describe a girl, at the age of 6, who was hospitalized due to rapid bronchoconstriction and based on the anamnesis, clinical symptoms and physical findings the suspicion was that she aspirated the foreign body. Due to the poor general condition and possible sequel, the idea of RB was dropped out. Multidetector computed tomography of the chest and VB was performed and AFB was not found. Due to positive epidemiological situation, virus H1N1 was excluded. FOB established that the foreign body does not exist in the airways. During bronchoscopy numerous castings are aspirated from the peripheral airways which lead to faster final recovery. With additional procedures, the diagnosis of asthma was confirmed and for girl that was the first attack. Along with inhaled corticosteroids as prevention she feels well.

Virtual bronchoscopy can be successfully used as a valid diagnostic procedure in suspected foreign body in the children's lungs, but fiber-optic bronchoscopy remains most important diagnostic and therapeutic method.

Keywords: asthma, children, foreign body, virtual bronchoscopy.

SAŽETAK

U dijagnostikovanju aspiracije stranog tela (AFB) kod dece najvažniji su: anamneza, klinički znaci i pozitivna radiografija pluća. Česte dileme u diferencijalnoj dijagnozi su po život opasni napadi astme ili teška upala pluća. Konvencionalna rigidna bronhoskopija (RB) se ne preporučuje kao rutinska metoda dok virtuelna bronhoskopija (VB) može biti dijagnostička metoda za rešavanje dilema. Fiberoptička bronhoskopija (FOB) ima terapijskog udela u težim slučajevima. Ovde, opisujemo devojčicu, uzrasta 6 godina, koja je hospitalizovana zbog naglo nastale bronhokonstrikcije i na osnovu anamneze, kliničkih simptoma i fizikalnog nalaza posumnjano je da se radi o aspiraciji stranog tela. Zbog lošeg opšteg stanja i eventualnih komplikacija, odustalo se od RB. Urađena je multidetektor kompjuterizovana tomografija (MDCT) grudnog koša i virtuelna bronhoskopija (VB) i AFB nije pronađena. Zbog pozitivne epidemiološke situacije, virus H1N1 je isključen. FOB je utvrdila da strano telo ne postoji u disajnim putevima. U toku bronhoskopije aspirirani su brojni odlivci u perifernim disajnim putevima što je i dovelo do konačnog bržeg oporavka. Dodatnim procedurama devojčici je dijagnostikovana astma i to je bio prvi po život opasan napad. Uz prevenciju sa inhaliranim kortikosteroidima ona je nakon tog napada bila bez tegoba.

Virtuelna bronhoskopija može se uspešno koristiti kao validna dijagnostička procedura kod sumnje na strano telo u plućima kod dece ali fiberoptička bronhoskopija ostaje suverena metoda kako u dijagonstici tako i u njenom terapijskom učinku.

Ključne reči: astma, deca, strano telo, virtuelna bronhoskopija.

ABBREVIATIONS

AFB – aspiration of the foreign body
BDT – bronchodilator test
ECP – eosinophilic cationic protein
FEV1 – forced expiratory volume in first second
FOB – fiber-optic bronchoscopy

IMC – Institute for Health Protection of Mother and Child of Serbia “Dr Vukan Cupic”
MDCT – multidetector computed tomography
RDG – radiography of chest
RB – rigid bronchoscopy
VB – virtual bronchoscopy