P21 TRANSBRONHIJALNA BIOPSIJA

Jane Bušev[1], Daniela Buklioska-Ilievska[1], Svetlana Jovevska[2], Marjan Baloski[1], Božidar Popovski[1], Vanče Trajkovska[1], Iva Sajkovska[1]

[1]*Gradska opšta bolnica "8-mi septemvri", Skopje, R Severna Makedonija*

[2]*Fakultet za medicinski nauki, Univerzitet " Goce Delčev ", Štip, R Severna Makedonija*

UVOD

Transbronhijalna biopsija (TBB ili TBLB – transbronchial lung biopsy) je invazivna metoda koja se primenjuje u postavljanju definitivne histoloske dijagnoze kod lokalizovanih fokalnih i difuznih promena plucnog parenhima. TBB se izvodi u lokalnoj anesteziji kod hospitalnih i ambulantnih pacijenata. Senzitivnost i specificnost se povecavaju sa napredovanjem rentgenskih promjena i u odmaklom stadijumu bolesti. Kod nekih oboljenja (kao sarkoidoza), moze se dobiti karakteristicna histoloska slika i kada rentgenske promene se ne mogu uociti. Kada se vrsi pod fluoroskopskom kontrolom i uz vestog patologa, tocnost transbronhijale biopsije u dijagnostici lokalizovanih malignih tumora je preko 70%. Transbronhijalna biopsija pluća (TBB), takođe poznata kao „Bronhoskopska biopsija pluća" je dobro uspostavljena tehnika i obično se izvodi od strane pulmologa kako bi se dobili uzorci kod žarišnih i difuznih bolesti pluća. Ova tehnika ima nisku stopu morbiditeta i mortaliteta. Biopsija pluća je obavljana otvorenim hirurškim metodama do 1963 godine, kada je dr Anderson izvršio bronhoskopsku biopsiju pluća uz pomoć krutog bronhoskopa. Transbronhijalna biopsija pluća (TBLB ili TBBx) putem fleksibilne bronhoskopije (FB) uvedena je u ranih 1970-ih i od tada je široko korišćena. Postoje mnoge modifikacije tehnike transbronhijalne biopsije. Najčešće se izvodi zaglavljivanjem opsega u segmentni bronhus od interesa, a zatim propuštanjem forcepsa (kljesta) kroz radni kanal opsega i napredovanjem do obolelog regiona dok se ne oseti otpor. Nakon toga forceps se povlači oko 1 – 2 cm, čeljusti se otvaraju i šire se pažljivo, klešta napreduje do područja gde se pronalazi otpor i vilice se zatvaraju. Forceps za biopsiju mora biti čvrsto povučen da bi se dobio uzorak. Tokom postupka neki lekari pitaju pacijenta za neugodnost u ramena, grudima ili gornji deo trbuha sto bi ukazivalo na blizinu pleuralnog prostora, naročito ako se ne koristi fluoroskopija. Zatvaranje čeljusti kljesti u toku ekspirijuma je također uobičajena tehnika. Fluoroskopija je vrsta rentgenskog snimanja koja pruža kontinuiranu sliku na monitoru. Tokom fluoroskopije rentgenski zrak prolazi kroz tijelo i daje sliku kretanja dijela tijela ili instrumenta (može se videti detaljno na ekranu). Kontraindikacije za TBB su respiratorna slabost, mehanička ventilacija, kontralateralna pulmektomija, suspektne vaskularne lezije, apsces pluća, ehinokokna cista, plućna hipertenzija, bulozna bolest, tvrdokoran kašalj, koagulopatija, trombocitopenija.

CILJ

Cilj rada je utvrditi doprinos i ucinkovitost transbronhijalne biopsije u dijagnostickom algoritmu kod lokalizovanih i difuznih rentgenskih promena na plucima u hospitalizovanih i ambulatornih pacijenata

MATERIJALI I METODE

retrospektivnom analizom 20 godisnjeg perioda (2003-2023) razmotreni su 450 bronhoskopskih izvestaja sa uradjenom TBB (72 ambulantno, kod ostalih 378 TBB je bila uradjena u hospitalnim uslovima na Pulmoloskom odeljenju, iskljucivo retko kod hospitalizovanih sa drugih odeljenja Gradske opste bolnice "8-mi septemvri" u Skoplju). Kod svih su na radiografiji pluca bile uocene promene (fokalne ili dufuzne). Dijagnostika je ukljucivala sledece postupke: standardnu PA i profilnu radiografiju (kod vecine i CT sken grudnog kosa sa primenom intravenskog kontrasta), fiberopticku bronhoskopiju (u najvecem broju sa instrumentom marke Olympus BF TYPE 1T 180, redje Stortz-ovim fiberskopom) i transbronhijalnu biopsiju fleksibilnim forcepsom.

REZULTATI

prema radiografskom nalazu ispitanike (N 395) smo podelii u 4 kategorije Kategorija 1 (N 268) – Jednostrane lokalizovane promene prema polozaju i velicini rentgenskih promena opredelili smo dve podgrupe – centralne promene – periferne promene (velicine ispod 30mm, 30-60mm i preko 60mm) Kategorija 2 (N 42) – Jednostrane prosirene promene (tumorske lezije i atelektaze) Kategorija 3 (N 23) – Obostrane ogranicene promene Kategorija 4 (N 62) – Difuzne promene plucnih polja (intersticijske promene) Svi ispitanici su imali UREDAN endoskopski nalaz (u okviru fizioloskog za odredjene starosne dobi: bronhije slobodno prolazne do nivou subsegmenata, karine ostre, bez submukoznih ili drugih patoloskih infiltrata). Dominirao je muski pol (67%), starosti od18 do 88 godina. U 395 pacijenata uradjeno je ukupno 450 TBB (ponovljene su 55 biopsije – 12%). Konkluzivni histopatoloski nalaz (histoloski entitet/dijagnoza) dobiven je kod 270 (68%) pacijenata kod kojih je bilo uradjeno 306 biopsija (68% od ukupnog broja, 36 su bile ponovljene biopsije). U ostalih 125 (32%) pacijenata u kojih je bilo uradjeno 144 biopsija (19 ponovljenih), dobiveni histoloski nalazi su kategorisani kao „negativan nalaz". Konkluzivni ("pozitivni") histopatoloski nalazi (iz prve ili iz ponovljene TBB) su podeljeni u 5 grupe/kategorije • Non Small Cell Lung Carcinoma (ukljucivsi histopatoloske entitete Carcinoma planocellulare bronchogenes, Large cell i Adenocarcinoma (ukljucivsi carcinoma bronchioloalveolare) kao i neklasifikovanii nedovoljno definisani malignitet – 157 (58 %) • Small Cell Lung Carcinoma (Carcinoma microcellulare bronchogenes (ukljucivsi histopatoloskientitet Oat cell carcinoma i nalaz metastatskog depozita) – 51 (19%) • Sarcoidosis 16 (6%) • Tuberculosis (ukljucivsi miliarni oblik i nalaz nedovoljno definisanog granulomatoznog tkiva) – 19 (7%) • Drugi nalazi (kao "fibrosis", "hemosiderosis" i histoloski opisi koji su se klinicki uklapali u kategorije nemalignih entiteta ali su u velikoj meri i znacajno doprineli postavljanju (definisanju i formiranju) konacne dijagnoze – 27 (10 %) U 125 ispitanika iz prve i iz ponavljanih biopsija (ukupno 144) bio je dobiven nekonkluzivni („nedefinisan") histopatoloski nalaz (odgovor patologa nije bio dovoljno precizan, jasan ili definisan u pravcu maligniteta, hronicne upale i/ili druge benigne promene, ili je uzorak bio mali i nepodoban za histolosku obradu, sto je zahtevalo rebiopsiju od reprezentativnijeg mesta). Fluoroskopija je koriscena kod izvodjenja 404 biopsija (46 TBB su uradjene bez fluoroskopske kontrole, od kojih u 20 je bio dobiven „pozitivan" histopatoloski nalaz). Nisu zapazene vece komplikacije. Parcijalni pneumotoraks se

retko zapazao (u 13 – 3% slucajeva neposredno ili 24 casova nakon izvodjenja prve ili ponovljene biopsije). Obicno se radilo o malom samolimitirajucem obliku sto nije zahtevalo vecu intervenciju (tretman je bio konzervativan, retko je bila primenjena torakalna drenaza).

ZAKLJUČAK

Rezultati ovog ispitivanja ukazuju da je primena biopsije tokom bronhoskopskog pregleda neophodna u svih radiografski nejasnih parenhimskih plucnih infiltrata. TBB je bezbedna i jeftina invazivna dijagnosticka metoda za histolosku potvrdu promena u plucima. Pri dobrom selekcijom bolesnika koji nisu razjasnjeni postizu se solidni rezultati sa prihvatljivim komplikacijama. Strategija lecenja bronhijalnog karcinoma zahteva jasnu histopatolosku kategorizaciju. Saglasno time, kod nedovoljno definisanih histoloskih nalaza je indicirana rebiopsija. Ponavljane biopsije povecavaju dijagnosticki doprinos. Dijagnostički doprinos se može poboljšati fluoroskopijom u odabranoj populaciji pacijenata sa smanjenjem rizika od komplikacija. Fluoroskopski vođena transbronhijalna biopsija je vremenski efektivna, sigurna i efikasna metoda kod fokalnih i difuznih plućnih lezija.

KLJUČNE REČI

Transbronhijalna biopsija, bronhoskopija, histopatoloski nalaz, fluoroskopija

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[1]*City General Hospital 8th of September, Skopje, Republic of North Macedonia*
[2]*Faculty of Medical Sciences Goce Delčev University, Štip, Republic of North Macedonia*

INTRODUCTION

Transbronchial biopsy (TBB or TBLB – transbronchial lung biopsy) is an invasive method used to establish a definitive histological diagnosis in localized focal and diffuse changes in the lung parenchyma. TBB is performed under local anesthesia in hospital and outpatient patients. Sensitivity and specificity increase with the progression of X-ray changes and in the advanced stage of the disease. In some diseases (such as sarcoidosis), a characteristic histological picture can be obtained even when X-ray changes cannot be observed. When performed under fluoroscopic control and with an experienced pathologist, the accuracy of transbronchial biopsy in the diagnosis of localized malignant tumors is over 70%. Transbronchial lung biopsy (TBB), also known as "bronchoscopic lung biopsy" is a well-established technique and is commonly performed by pulmonologists to obtain samples in focal and diffuse lung disease. This technique has a low morbidity and mortality rate. Lung biopsy was performed by open surgical methods until 1963, when Dr. Anderson performed a bronchoscopic lung biopsy using a rigid bronchoscope. Transbronchial lung biopsy (TBLB or TBBx) via flexible bronchoscopy (FB) was introduced in the early 1970s and has been widely used since then. There are many modifications of the transbronchial biopsy technique. It is most commonly performed by jamming the scope into the segmental bronchus of interest, then passing the forceps through the working channel of the scope and advancing to the diseased region until resistance is felt. After that, the forceps are withdrawn about 1 - 2 cm, the jaws are opened and spread carefully, the forceps are advanced to the area where resistance is found and the jaws are closed. The biopsy forceps must be pulled firmly to obtain the specimen. During the procedure, some doctors ask the patient about discomfort in the shoulders, chest or upper abdomen that would indicate the proximity of the pleural space, especially if fluoroscopy is not used. Closing the jaws of the forceps during expiration is also a common technique. Fluoroscopy is a type of X-ray imaging that provides a continuous image on a monitor. During fluoroscopy, an X-ray beam passes through the body and gives an image of the movement of a part of the body or an instrument (can be seen in detail on the screen). Contraindications for TBB are respiratory weakness, mechanical ventilation, contralateral pulmectomy, suspicious vascular lesions, lung abscess, echinococcal cyst, pulmonary hypertension, bullous disease, persistent cough, coagulopathy, thrombocytopenia.

OBJECTIVE

The aim of the work is to determine the contribution and effectiveness of transbronchial biopsy in the diagnostic algorithm for localized and diffuse X-ray changes in the lungs in hospitalized and ambulatory patients

MATERIAL AND METHODS

in a retrospective analysis of a 20-year period (2003-2023), 450 bronchoscopic reports with performed TBB were considered (72 on an outpatient basis, in the other 378 TBB was performed in hospital conditions at the Pulmonology Department, exclusively rarely in patients hospitalized from other departments of the City General Hospital "8-mi September" in Skopje). In all of them, changes (focal or diffuse) were observed on the radiograph of the lungs. Diagnostics included the following procedures: standard PA and profile radiography (in most cases, a CT scan of the chest with the use of intravenous contrast), fiberoptic bronchoscopy (mostly with an Olympus BF TYPE 1T 180 instrument, rarely with a Stortz fiberscope) and transbronchial biopsy with a flexible forceps.

RESULTS

according to the radiographic findings, we divided the respondents (N 395) into 4 categories Category 1 (N 268) – Unilateral localized changes according to the position and size of the X-ray changes, we identified two subgroups – central changes – peripheral changes (sizes under 30mm, 30-60mm and over 60mm) Category 2 (N 42) – Unilateral extended changes (tumor lesions and atelectasis) Category 3 (N 23) – Mutual limited changes Category 4 (N 62) – Diffuse changes in lung fields (interstitial changes) All subjects had a PERFECT endoscopic finding (within the physiological range for a certain age: bronchi freely passing to the level of subsegments, carinae sharp, without submucosal or other pathological infiltrates). The male gender dominated (67%), aged from 18 to 88 years. A total of 450 TBBs were performed in 395 patients (55 biopsies were repeated - 12%). A conclusive histopathological finding (histological entity/diagnosis) was obtained in 270 (68%) patients in whom 306 biopsies were performed (68% of the total number, 36 were repeated biopsies). In the other 125 (32%) patients in whom 144 biopsies were performed (19 repeated), the obtained histological findings were categorized as "negative findings". Conclusive ("positive") histopathological findings (from the first or from repeated TBB) are divided into 5 groups/categories • Non Small Cell Lung Carcinoma (including the histopathological entities Carcinoma planocellulare bronchogenes, Large cell and Adenocarcinoma (including carcinoma bronchioloalveolare) as well as unclassified insufficiently defined malignancy - 157 (58%) • Small Cell Lung Carcinoma (Carcinoma microcellulare bronchogenes (including the histopathology of Oat cell carcinoma and the finding of a metastatic deposit) – 51 (19%) • Sarcoidosis 16 (6%) • Tuberculosis (including miliary form and the finding of insufficiently defined granulomatous tissue) - 19 (7%) • Other findings (such as "fibrosis", "hemosiderosis" and histological descriptions that clinically fit into the categories of non-malignant entities but contributed to a large extent and significantly to the establishment (definition and formation) of the final diagnosis - 27 (10%) In 125 subjects from the first and repeated biopsies (144 in total), an inconclusive ("undefined") histopathological finding was obtained (the pathologist's answer was not sufficiently precise, clear or defined in the direction of malignancy, chronic inflammation and/or other benign changes, or the sample was small and unsuitable for histological processing, which required a rebiopsy from a more representative site).

Fluoroscopy was used in the performance of 404 biopsies (46 TBB were performed without fluoroscopic control, in 20 of which a "positive" histopathological finding was obtained). No major complications were observed. Partial pneumothorax was rarely observed (in 13 – 3% of cases immediately or 24 hours after the first or repeated biopsy). It was usually a small self-limiting form that did not require major intervention (the treatment was conservative, thoracic drainage was rarely used).

CONCLUSION

The results of this study indicate that biopsy during bronchoscopic examination is necessary in all radiographically unclear parenchymal lung infiltrates. TBB is a safe and inexpensive invasive diagnostic method for histological confirmation of lung changes. With a good selection of patients who have not been clarified, solid results are achieved with acceptable complications. Bronchial cancer treatment strategy requires a clear histopathological categorization. Accordingly, rebiopsy is indicated for insufficiently defined histological findings. Repeated biopsies increase the diagnostic contribution. The diagnostic contribution can be improved by fluoroscopy in selected patient populations with a reduced risk of complications. Fluoroscopically guided transbronchial biopsy is a time-effective, safe and effective method for focal and diffuse lung lesions.

KEYWORDS

Transbronchial biopsy, bronchoscopy, histopathological findings, fluoroscopy