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Çocuklarda endoskopi araştırması

Endoscopy in children for research

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This letter is a continuation of preceding reviews on invasive methods applied with questionable clinical indications, also for research [1-3], in particular, the use of bronchoscopy in bronchial asthma, in spite of the prevailing opinion that it has not much benefit [4]. In the literature, no particular role of bronchoscopy in the diagnostics and treatment of asthma has been specified, while asthmatics are regarded to be at risk for complications [4]. Among indications for bronchoscopy are persistent wheeze unresponsive to bronchodilators and other therapy [5,6]. While there are other diagnostic tests, the most common indication for bronchoscopy in asthma is a search for an alternative condition causing the symptoms [5]. Removal of mucus plugs by lavaging of bronchi was recommended in severe asthma under certain conditions [7,8]. Exacter formulations are avoided here because this letter is not an instructive publication. The newest Russian-language textbooks are largely based on the international literature. However, earlier textbooks and manuals contained recommendations that were at variance with international practice. In asthmatics, the purpose of bronchoscopy was stated to be a search for signs of infection; examination of lavage fluid was recommended for the same purpose [9,10]. Abundant secretion or mucopurulent sputum in children was presented as indication for bronchoscopy "for evaluation of endobronchial inflammation" [11]. Asthma, tuberculosis and bronchitis (in particular, "atrophic bronchitis") were generally presented as indications for bronchoscopy [12,13]. Laser treatment via bronchoscope was applied in children in chronic pneumonia, asthma and bronchitis [14,15], also in the presence of "pronounced atrophy of bronchial mucosa" [16]. Note that, similarly to other forms of electromagnetic radiation, laser at lower power densities causes warming and at higher energy – damage of tissues. From the viewpoint of general pathology, atrophy may progress due to additional damage. Bronchial biopsies were collected for research from patients with "chronic atrophic bronchitis" and "primary atrophic bronchopathy" including that supposedly caused by ionizing radiation, whereas histological specimens shown as illustrations were thick [17]. Not only flexible but also rigid bronchoscopes have been used [18]. For acute pneumonia in children, bronchoscopy was recommended to determine the type of inflammation in bronchi (catarrhal or purulent), for chronic pneumonia - to exclude tuberculosis and congenital anomalies. Primary tuberculosis in children was regarded to be an indication for bronchoscopy [9], although this method is no more sensitive for culture of Mycobacteria than gastric aspiration [5,6]. In destructive tuberculosis, therapeutic bronchoscopy (1-2 weekly during 2-4 months) was officially recommended by the Health Ministry [19] and applied in spite of sometimes suboptimal procedural quality assurance; while the principle of informed consent was not always observed [20]. Among others, these conditions have been caused by partial isolation from the international scientific community and limited access to the foreign literature [21].

As mentioned above, bronchial biopsy specimens were used for research, whereas some morphological illustrations were hardly informative, morphometric and other quantitative indices uniformly improving after medical or surgical treatment of asthma [17,22,23], surgery being consistently more efficient [24]. Based

on corresponding experience [25], some datasets appear suspicious of trimming. Certain morphological descriptions were doubtful e.g. "atrophic processes" in bronchi of asthmatic children advancing with time: atrophy or subatrophy of bronchial mucosa was found in 79.5% of asthmatic children older than 12 years [18]. Furthermore, broncho- and gastrodoudenoscopy were used as a second phase of screening e.g. in children with "chronic non-specific pulmonary diseases" (including asthma and chronic bronchitis) found in 4.08 % of children residing in industrially contaminated areas of Moscow and the suburbs [26]. Bronchoscopy was used as a screening method in young (mean age 19.5 years) individuals diagnosed with community-acquired pneumonia (1478 bronchoscopies in 977 patients), while the most frequent finding was mucopurulent bronchitis [27]. Biopsies were taken for research from large bronchi of patients with known lung cancer whereas histological sections presented as illustrations were thick and uninformative [23]. Admittedly, as far as it can be perceived from the literature, bronchoscopy is less frequently used in children for research today. For example, in the study [28], bronchoscopy was applied in children 5-15 years of age with moderate to severe asthma, while informed consent was obtained from parents.

In the pediatric clinic of I.M. Sechenov Medical University (a leading institution where textbooks have been issued [9]) endoscopic methods have been widely used for diagnostic, therapeutic and research purposes since the 1960s also in newborn infants [29]. At the same time, complications in children were noticed [30]. Bronchoscopy was applied in children with pneumonia, chronic bronchitis and asthma [30-32]. Besides, upper gastrointestinal endoscopy with biopsies used for research was applied in children with rheumatoid arthritis, dermatomyositis, scleroderma, systemic lupus erythematosus, respiratory and hepatobiliary diseases [26,33-38]. Gastroscopy was used as a screening method in children of mothers with bronchial asthma [39]. Informed consent was mentioned only in recent papers [28,40,41].

Numerous bronchoscopic methods applied in children and adults for diagnostics and therapy have been patented; here follow several examples. Monitoring of treatment efficiency of chronic catarrhal bronchitis by means of repeated examinations of bronchial washings obtained by bronchoscopies performed every other day during the whole period of treatment [42]; laser treatment via bronchoscope of "atrophic bronchitis deformans" (the term was used in the former SU having no clear radiological signs) [43]; bronchitis diagnostics in children [44] and adults [45], treatment of pulmonary tuberculosis by endobronchial instillations of surfactant preparations produced from bovine lung or human amniotic fluid every other day during 3-8 weeks [46] discussed in [1,47].

In conclusion, the purpose of this letter was to overview some endoscopic procedures with questionable indications used in the past, and to remind that the risk-to-benefit ratio should be kept as low as possible. When a child is able to give assent to decisions about participation in research, the investigator must obtain it in addition to the consent of parents or legally authorized representatives. Adolescents are in a sense between children, who are to be treated according to their best interests represented by parents or legally authorized persons, and independent adults, who are to be treated according to their wishes [48]. Consent of human subjects for participation in research requires that they fully understand their role and risks, and can withdraw at any time without being punished. Children require additional protection [49,50]. In the author's opinion, endoscopy for research and screening (bronchoscopy in particular) should not exist as such in children and adolescents; it should always be performed according to clinical indications. If a patient gives informed consent to research on endoscopic biopsy specimens obtained for diagnostic purposes, it can be done, provided that enough tissue remains for the diagnostics, if non-morphological or otherwise suboptimal for the diagnosis research methods, consuming the tissue, are applied [51]. Finally, significance of the procedural quality assurance in endoscopy should be stressed, especially the training methods not involving patients e.g. using anatomic models and video technologies as well as selection of capable trainees [5].

CONFLICT OF INTEREST

The author declares that there are no conflicts of interest.

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