УДК: 616.328.2-002.3-039-07-08-053.2
DOI: 10.24061/2413-4260.XIII.2.48.2023.21

CASUISTIC CASE OF RETROPHARYNGEAL ABSCESS WITH AN ATYPICAL CLINICAL PICTURE IN A CHILD

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Summary.

Retropharyngeal abscess is an acute purulent inflammation of the lymph nodes and loose tissue of the pharyngeal space. The pharyngeal space spans from the base of the skull to the lower edge of the pharynx. It is bounded anteriorly by the posterior pharyngeal wall and posteriorly by the prevertebral fascia. Laterally, it is bounded by the parapharyngeal spaces and the neurovasc ular bundles of the neck, and it extends into the posterior mediastinum inferiorly., which facilitates the spread of abscess into the mediastinum, causing mediastinitis. The lymph nodes of the pharyngeal space are regional to the nasopharynx, oropharynx, posterior nasal cavity, auditory tube, and tympanic cavity. Therefore, the causative factors of retropharyngeal abscess are inflammatory diseases of the upper respiratory tract and middle ear. Retropharyngeal abscess is an extremely serious pathology of early childhood and is observed in children of the first 4 years of life. In children over the age of 4, it practically does not occur due to regression and obliteration of the lymph nodes and regression of the pharyngeal space.

We have described a clinical case of the retropharyngeal abscess in a child aged 4 years and 10 months, the symptoms and course of which are radically different from the classic symptoms of this pathological condition in children of early childhood. In the differential diagnosis of the retropharyngealt abscess it is necessary to distinguish it from a number of diseases, namely ARVI, acute nasopharyngitis, tonsillitis, including lingual and pharyngeal tonsils, stomatitis, paratonsillitis, paratonsillar abscess, Ludwig's angina, parapharyngeal phlegmon, phlegmon of the neck, mononucleosis, acute stenosing laryngotracheitis, acute subglottic laryngitis (pseudocroup), pneumonia,cervical lordosis, aneurysm of ascending aorta or cervical artery, tumors of the nasopharynx, foreign bodies of pharynx, larynx, and cervical esophagus.

Complications make this disease extremely dangerous. The most common complications are observed in the second week of the disease in cases of undiagnosed process, namely laryngeal oedema with development of acute stenosis, pneumonia, sepsis, meningoencephalitis, spread of inflammation to the interfascial space of the neck and posterior mediastinum with development of purulent mediastinitis and varrious septic complications.

The most unexpected and dangerous complication is death by asphyxia, which occurs when the abscess opens spontaneously due to aspiration of pus.

Thus, retropharyngeal abscess occurs mainly in early childhood due to the peculiarities of the anatomical structure of the pharyngeal space, loose tissue and lymph nodes. These anatomical features of the pharynx and pharyngeal space in childhood and the causative factors should be taken into account by the doctor in case of any deterioration of the child's general condition accompanied by hyperthermia, impaired breathing and swallowing difficulties. However, the less frequent but possible occurrence of a retropharyngeal abscess with atypical clinical symptoms after the age of 4 years should not be forgotten.

The Commission on Biomedical Ethics of the BSMU of the Ministry of Health of Ukraine (Chernivtsi) determined that the study was conducted in compliance with the "Rules of Ethical Principles for Scientific Medical Research Involving Human Subjects" approved by the Declaration of Helsinki (1964-2013), ICH GCP (1996), Regulation (EU) No. 609 of 24 November 1986, and Orders of the Ministry of Health of Ukraine No. 690 of 23 September 2009, No. 944 of 14 December 2009, No. 616 of 03 August 2012. The material presented in this article may be recommended for publication (Protocol No. 7 of 18 May 23).

Key words: *Pharynx; Retropharyngeal Space; Abscess; Hyperthermia; Childhood; Opening; Drainage; Therapy.*

Retropharyngeal abscess is an acute purulent inflammation of the lymph nodes and loose tissue of the pharyngeal space [1]. The pharyngeal space spans from the base of the skull to the lower edge of the pharynx [2]. It is bounded anteriorly by the posterior pharyngeal wall and posteriorly by the prevertebral fascia. Laterally, it is bounded by the parapharyngeal spaces and the neurovasc ular bundles of the neck. It extends into the posterior mediastinum inferiorly, which facilitates the spread of abscess into the mediastinum, causing mediastinitis [3, 4]. The lymph nodes of the pharyngeal space are regional to the nasopharynx, oropharynx, posterior nasal cavity, auditory tube, and tympanic cavity [5-9].

Retropharyngeal abscess is an extremely serious pathology of early childhood and is observed in children of the first 4 years of life [10]. In children over the age of 4, it practically does not occur due to regression and obliteration of the lymph nodes and regression of the pharyngeal space [11, 12].

We have described a clinical case of the retropharyngeal abscess in a child aged 4 years and 10 months, the symptoms and course of which are radically different from the classic symptoms of this pathological condition in children of early childhood. In the differential diagnosis of the retropharyngealt

ISSN 2226-1230 (PRINT) ISSN 2413-4260 (ONLINE)
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ABBREVIATED KEY TITLE: NEONATOL. HÌR. PERINAT. MED. (ONLINE)

abscess it is necessary to distinguish it from a number of diseases, namely ARVI, acute nasopharyngitis, tonsillitis, including lingual and pharyngeal tonsils, stomatitis, paratonsillitis, paratonsillar abscess, Ludwig's angina, parapharyngeal phlegmon, phlegmon of the neck, mononucleosis, acute stenosing laryngotracheitis, acute subglottic laryngitis (pseudocroup), pneumonia,cervical lordosis, aneurysm of ascending aorta or cervical artery, tumors of the nasopharynx, foreign bodies of pharynx, larynx, and cervical esophagus [13-18].

Complications make the condition extremely dangerous. The most common occur in the second week if the process is undiagnosed and include laryngeal oedema with development of acute stenosis, pneumonia, sepsis, meningoencephalitis, spread of inflammation to the interfascial space of the neck and posterior mediastinum with development of purulent mediastinitis and various septic complications [19, 20]. The most unexpected and dangerous complication is death by asphyxia, which occurs when the abscess opens spontaneously due to aspiration of pus.

The prognosis is favourable with timely diagnosis and treatment (abscess opening, antibacterial and decongestant therapy, drainage) [21-25].

Delayed diagnosis and untimely opening of the abscess can lead to the above-mentioned complications. These can be life-threatening for the child.

Over the past 25 years (since 1987), 11 children with the diagnosis of pharyngeal abscess were treated in otorhinolaryngology departments in Chernivtsi region. Of these, 6 children were aged 5 months to 1 year, 3 children were aged 12 to 18 months, one was aged 2 years 2 months and one was aged 3 years.

All children had timely diagnosis, adequate treatment with abscess drainage and were discharged with recovery. The length of hospital stay for 10 children ranged from 8 to 11 bed days. One child, aged 1 year 3 months, was hospitalised for 17 days due to the development of septic complications. These data show that this pathology is observed in early childhood and over 25 years no case of retropharyngeal abscess has been observed in children over 4 years.

Therefore, we present a casuistic case of retropharyngeal abscess from clinical practice in a boy aged 4 years 10 months. The child was initially admitted to a city hospital's paediatric surgery unit for acute left-sided cervical lymphadenitis. Because of severe hyperthermia and intoxication syndromes, he received powerful antibacterial therapy, hyposensitisation and detoxification therapy. The child was consulted by a paediatrician, a paediatric otolaryngologist, a paediatric infectious disease specialist, a paediatric intensive care specialist and a paediatric haematologist in order to exclude relevant pathology and establish an accurate diagnosis. As a result of adequate therapy, the clinical course of cervical lymphadenitis improved moderately. On day 5, he was re-examined by a paediatric otolaryngologist and an otolaryngologist from the Chernivtsi Regional Clinical Hospital (CRCH). It was recommended that a CT scan of the neck be performed and that the child be transferred to the ENT Centre of the Chernivtsi Regional Clinical Hospital with a diagnosis of retropharyngeal abscess.

The patient was admitted to the ENT Centre of the CRCH in a state of moderate severity. The skin and visible mucous membranes were pale pink. Peripheral lymph nodes were not palpable except in the left neck, temperature was 37.60C, pulse was 104 beats/min, blood pressure was 90/55 mmHg.

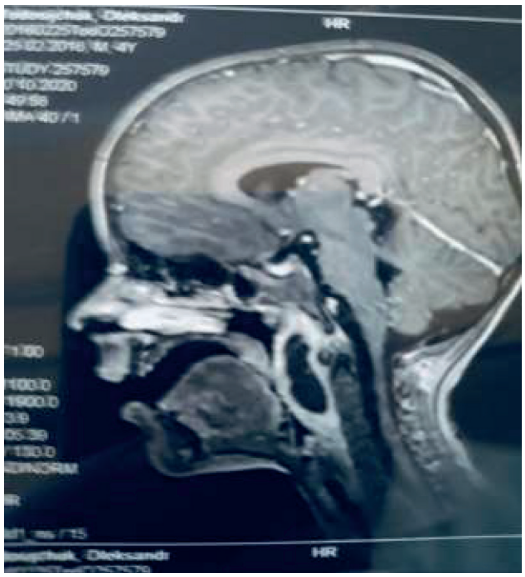

Figure 1. CT scan of the neck

Tye patient complained of difficulty swallowing, pain in the right side of the neck, pain when turning the head, head position with a backward tilt to the right side. Conventional endoscopy of the ENTs, endovideorhinoscopy of the nose and nasopharynx, and fibrolaryngoscopy were performed. During oropharyngoscopy the patient opened his mouth freely, there was no trismus. There was no asymmetry of the soft palate. The palatine tonsils were grade I-II with a smooth surface without pathological content. There was only asymmetry along the posterior pharyngeal wall on the left, moderate infiltration, pastiness and hyperemia of the posterior pharyngeal wall on the left. In the nasopharynx: adenoid vegetations of grade I-II with signs of chronic adenoiditis. In the laryngopharynx: the lingual tonsil was not enlarged, the valleculae were free, the pyriform sinuses were open. The vocal folds were of normal colour, mobile, the glottis was of normal width, the voice was clear. There was no abnormality in the otoscopic picture. WT (AS=AD) = 6 m. On the left lateral surface of the neck, along the anterior border of the masseter muscle behind the angle of the mandible, an infiltrate was found, 3*2*2 cm, moderately painful on palpation, the overlying skin unchanged. A CT scan of the neck (Figure 1) showed a large right-sided retropharyngeal infiltrate with a clear contour, fluid content and abscess formation. There was thickening and infiltration of the retropharyngeal soft tissues and substenosis of the pharyngeal lumen. Complete blood count showed leukocytosis, left shift, elevated ESR (erythrocytes 3.2*1012/L, haemoglobin 98 g/L, colour index 0.9, leukocytes - 17*109/L: eosinophils − 1, stab cells − 13, segmentated cells – 70, lymphocytes − 12, monocytes − 4.

During the examination, a diagnostic puncture of the posterior pharyngeal wall at the site of the right infiltrate was performed, yielding 1 ml of pus and confirming the diagnosis of a right retropharyngeal abscess. The following was recommended: opening of the retropharyngeal abscess under general anaesthesia with subsequent drainage and antibiotic therapy.

Under general combined anaesthesia with tracheal intubation using a mouth dilator, a surgical incision was made 1 cm from the midline in the oropharynx and partially in the larynx at the site of the greatest protrusion. 3-4 ml of pus was removed using an electric suction device with a flexible catheter. The abscess cavity was debrided and washed with Decasan antiseptic solution.

There were no complications in the postoperative period. Daily debridement of the wound eges at the site of the abscess incision was performed under adequate intravenous anaesthesia for the next 3 days. The forcept was inserted into the abscess cavity through the site of the previous incision, the branches of the instrumen were moved apart to ensure the effective drainage of purulent contents. The patient received the following treatment: Zinaceph 0.75 ml IV drip 2 times a day for 7 days, Rheosorbilact 150 ml IV once a day for 2 days, saline 0.9% 200 ml + 5% ascorbic acid solution 2 ml IV once a day for 3 days, Dexalgin 1.0 ml in saline 4 ml. 1 time a day on the day the abscess was opened. The patient received the following treatment: Zinaceph 0.75 ml IV drip 2 times a day for 7 days, Rheosorbilact 150 ml IV once a day for 2 days, saline 0.9% 200 ml + 5% ascorbic acid solution 2 ml IV once a day for 3 days, Dexalgin 1.0 ml in saline 4 ml. 1 time a day on the day the abscess was opened. The child's condition improved, treatment dynamics positive. On day 9, the child's general condition was satisfactory, body temperature was 36.6°C, sleep and appetite were normal. There were no clinical signs of abscess. Control clinical blood test before discharge: erythrocytes 3.7*1012/l, haemoglobin 110 g/l, colour index 1.0, leukocytes 7.2*109/l: eosinophils−2, stab cells−6, segmentated cells−62, lymphocytes−26, monocytes−4, ESR 28 mmol/l. The patient was discharged with recovery. It was recommended to follow up with an otorhinolaryngologist at the place of residence, to have a control examination in 1 month, and in the future, if indicated, to address the issue of surgical intervention for grade I-II adenoids in a planned manner. Thus, as a result of timely intervention, serious complications were avoided and the child, who developed a retropharyngeal abscess with an atypical presentation, recovered completely.

The Commission on Biomedical Ethics of the BSMU of the Ministry of Health of Ukraine (Chernivtsi) determined that the study was conducted in compliance with the "Rules of Ethical Principles for Scientific Medical Research Involving Human Subjects" approved by the Declaration of Helsinki (1964-2013), ICH GCP (1996), Regulation (EU) No. 609 of 24 November 1986, and Orders of the Ministry of Health of Ukraine No. 690 of 23 September 2009, No. 944 of 14 December 2009, No. 616 of 03 August 2012. The material presented in this article may be recommended for publication (Protocol No. 7 of 18 May 23).

Conclusion:

Retropharyngeal abscess occurs mainly in early childhood due to the peculiarities of the anatomical structure of the pharyngeal space, loose tissue and lymph nodes. These anatomical features of the pharynx and pharyngeal space in childhood and the causative factors should be taken into account by the doctor in case of any deterioration of the child's general condition accompanied by hyperthermia, impaired breathing and swallowing difficulties. However, the less frequent but possible occurrence of a retropharyngeal abscess with atypical clinical symptoms after the age of 4 years should not be forgotten. In such cases, a CT scan of the neck is mandatory for diagnosis.

Sources of funding: self-financing
The author declares no conflict of interest.

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KEY TITLE: NEONATOLOGIÂ, HÌRURGIÂ TA PERINATAL'NA MEDICINA (ONLINE)
ABBREVIATED KEY TITLE: NEONATOL. HÌR. PERINAT. MED. (ONLINE)
ISSN 2226-1230 (PRINT) ISSN 2413-4260 (ONLINE)

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КАЗУЇСТИЧНИЙ ВИПАДОК РЕТРОФАРИНГЕАЛЬНОГО АБСЦЕСУ З АТИПОВОЮ КЛІНІЧНОЮ КАРТИНОЮ У ДИТИНИ

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Резюме.

Ретрофарингеальний абсцес – це гостре гнійне запалення лімфатичних вузлів і пухкої клітковини заглоткового простору. Заглотковий простір розташований від основи черепа до нижнього краю глотки. Він обмежений спереду задньою стінкою глотки, а ззаду – передвертебральною фасцією. З боків межує з парафарингеальними просторами і з судинно-нервовими пучками шиї, а донизу переходить в заднє межистіння, що сприяє розповсюдженню гнійника у середостіння, викликаючи медіастиніт. Лімфатичні вузли заглоткового простору є регіонарними для носо-, і ротоглотки, задніх відділів порожнини носа, слухової труби, барабанної порожнини. Тому причинними факторами ретрофарингеального абсцесу є запальні захворювання верхніх дихальних шляхів і середнього вуха. Ретрофарингеальний абсцес є надзвичайно серйозною патологією раннього дитячого віку і спостерігається у дітей перших 4 років життя. У дітей, віком понад 4 роки практично не буває, тому що відбувається регрес і облітерація лімфатичних вузлів та зворотній розвиток заглоткового простору.

Нами описано клінічний випадок ретрофарингеального абсцесу у дитини 4 років 10 місяців, симптоматика і перебіг якого кардинально відрізняється від класичної симптоматики даного патологічного стану у дітей раннього дитячого віку. Проводячи диференційну діагностику ретрофарингеального абсцесу необхідно диференціювати його з низкою захворювань, а саме: гострою респіраторною вірусною інфекцією, гострим ринофарингітом, ангіна, в тому числі язикового і глоткового мигдаликів, стоматитом, паратонзилітом, паратонзилярним абсцесом, флегмоною дна порожнини рота, парафарингеальною флегмоною, флегмоною шиї, мононуклеозом, гострим стенозуючим ларинготрахеїтом, гострим підскладковим ларингітом (несправжній круп), пневмонією, лордозом шийного відділу хребта, аневризмою висхідної і глоткової артерій, пухлиною носоглотки, стороннім тілом глотки, гортані та шийного відділу стравоходу.

Дане захворювання небезпечне через цілу низку ускладнень. Найчастіше ускладнення спостерігається на другому тижні захворювання у випадках недіагностованого процесу - набряк гортані із розвитком гострого стенозу, пневмонія, сепсис, менінгоенцефаліт, розповсюдженість запалення у міжфасціальний простір шиї і заднє середостіння із розвитком гнійного медіастиніту і ряд септичних ускладнень. Найбільш неочікуваними і небезпечними ускладненнями є летальні наслідки від асфіксії, яка настає при самовільному розкритті абсцесу внаслідок аспірації гною.

Отже, ретрофарингеальний абсцес, в основному, виникає в ранньому дитячому віці у зв'язку з особливостями анатомічної будови заглоткового простору, пухкою клітковиною і лімфатичним вузлами. Ці анатомічні особливості будови глотки і заглоткового простору в дитячому віці та причинні фактори має враховувати лікар за будь якого погіршення загального стану дитини, що супроводжується гіпертермією та погіршенням дихання і ковтання. Але, також слід не

забувати про, менш ймовірне, але можливе, виникнення ретрофарингеального абсцесу з атиповою клінічною симптоматикою і у віці після 4 років.

Комісія з біомедичної етики БДМУ МОЗ України (м.Чернівці) встановила, що дослідження виконане з дотриманням «Правил етичних принципів проведення наукових медичних досліджень за участю людини», затверджених Гельсінською декларацією (1964-2013 рр.), ICH GCP (1996р.), Директиви ЄЕС №609 (від 24.11.1986 р.) і наказів МОЗ України № 690 від 23.09.2009 р., № 944 від 14.12.2009 р., № 616 від 03.08.2012 р. Наведений в роботі матеріал може бути рекомендований до друку (протокол №7 від 18.05.23 р.).

Ключові слова: глотка; ретрофарингеальний простір; абсцес; гіпертермія; дитячий вік; розтин; дренування; терапія.

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Received for editorial office on 07/02/2023
Signed for printing on 13/05/2023