

4. 新生兒에서 觀察할 수 있는 聽性反應

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新生兒 및 幼兒에서의 聽力の 診斷에 지금까지 수많은 방법이 연구 발표되어 왔으며, 그 중에서도 소리에 대한 新生兒, 및 幼兒의 具體的인 반응을 평가하는 것은 매우 중요하다.

著者들은 1977년 1월부터 同年 4월까지 서울대학교 小兒科新生兒室에 입원한 100명(男兒 54名, 女兒 46名)을 대상으로 하여 beltone audiometer model 10 d (Ansi 1969)를 사용해서 被檢者로부터 4인치의 거리에서 3,000 Hz, 90 dB의 純音으로 2초동안 자극하여 新生兒에서 나타나는 반응을 조사하여 다음과 같은 결론을 얻었다.

1. 被檢兒의 연령은 2시간 내지 3.5시간이었으며(평균연령 2.4시간), 안검반사가 39%, (안검을 폐쇄시키는 반응이 10%, 안검을 개대시키는 반응이 29%), Moro reflex가 35%로 가장 많았으며, 그 외에 손가락을 빠는 반응이 14%, 동작을 갑자기 정지하는 반응이 6%, 머리를 소리자극의 방향으로 움직이는 반응이 2%, 아무 반응도 나타나지 않는 예가 4%의 순서였다.

2. 소리 자극에 대한 新生兒의 반응시간은 2초 내지 5초(평균 3.3초)이었다.

5. 신생아의 Impedance audiometry

전주 예수병원

오 평 · 천경두 · 송재우 · 소진명

1880년대 신생아의 중이강내에는 분비물 또는 기타 결체조직이 들어있어 중이강내의 정상적인 운동성을 방해한다는 등 여러 이론들이 있었고 1973년 DeDmon은 신생아의 screening에 있어서 acoustic reflex의 역할에 대한 보고가 있었으며, 1974년 Keith는 electro-acoustic impedance bridge를 사용하여 출생후 20시간 이내의 신생아 20명에 대한 결과등을 보고하였다.

우리나라에서는 아직 신생아에 대한 보고가 없어서 본원에서는 본원 산부인과에서 출생후 24시간 이내의 신생아 100명에 대한 tympanogram, static compliance 및 acoustic reflex 등에 관한 결과를 문헌고찰과 함께 보고하는 바이다.

6. 유소아의 impedance audiometry에 관한 고찰

전주 예수병원

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1946년 Metz가 impedance audiometry를 처음 임상적으로 응용한 이래 많은 연구가 계속되고 있다.

Brooks는 4세 부터 11세 소아 1053명에 대한 electroacoustic impedance bridge의 결과를 보고하였고, J. Jerger는 6세이상 소아 398에 대한 impedance audiometry의 결과를 보고하였으며, Cooper 등은 소아 539명에 대한 conventional audiometry technic과 impedance audiometry와의 정확도를 비교 발표하였다.

우리나라에서는 1974년 서울대학교 이비인후과에서 처음으로 madsen impedance bridge를 도입하였고 다음으로 본원에서 1976년 teledyne impedance를 사용하여 1976년 9월 학동기 아동(7세부터 14세) 1023명에 대한 결과를 보고하였고 이번에는 1세부터 6세까지의 유소아 110명에 대한 impedance audiometry의 결과를 문헌고찰과 함께 보고하는 바이다.

7. 側頭骨의 含氣度와 中耳腔의 容積이 鼓膜 임피던스에 미치는 影響에 관한 研究

서울醫大

閔 陽 基

中耳의 impedance는 鼓膜, 耳小骨連鎖 및 中耳腔 · 乳樣洞 · 含氣蜂窩의 空氣腔에 의해 決定되는 바, 著者는 우선 신선한 개의 中耳를 재료로 하여 中耳腔의 腔氣體積을 변동시킴으로써 中耳腔의 空氣體積因子가 中耳의 impedance를 어떻게 변동시키는가를 조사하였고, 다음으로 過去歷과 現在상태에서 外耳道, 鼓膜 및 中耳에 病變이 없는 患者에서 中耳의 impedance를 측정하고 아울러 側頭骨의 X線像을 얻어 側頭骨의 含氣度에 따라 中耳의 static compliance의 변동을 조사하여 耳科學의 臨床的인 面에서의 中耳의 static compliance의 또 하나의 이용가치를 구명하여 다음과 같은 결론을 얻었다.

1. 개의 中耳는 control state에서 Type A의 tympanogram을 보였으며, 中耳腔의 空氣體積의 변동에 의

2) The incidence of hearing impairment is higher in middle and older age group.

3) Hearing impairment has not related to duration of the disease but blood sugar level and total serum cholesterol level in some extent.

4) The incidence of hearing impairment is higher in cases accompanied by complications such as retinopathy, hypertension, neuropathy etc.

5) In etiology of hearing impairment, multiple factors seem to be concerned.

4. Auditory responses in neonates; a preliminary report

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A variety of diagnostic means for evaluating the hearing ability of neonates and infants have been studied so far, and some physical responses of neonates and infants to loud sound is still of much value.

The author studied some normal responses of 100 neonates (male 54, female 46) in our neonatal room from Jan, 1977 to April, 1977.

We took 90dB pure tone at 3,000Hz by Beltone Audiometer model 10D (ANSI 1969) for a stimulus.

The results are as follows:

1. The range of the examinees' age is between 2 and 3.5 hours (average 2.4 hours), and auropalpebral response is in 39% (eyelid blinking 10%, eyelid widening 29%), Moro reflex in 35%, sucking response in 14%, cessation of movement in 6%, head turning response in 2%, and no response in 4%.

2. The duration of response is between 2 and 5 Seconds (average 3.3 seconds).

5. Studies in Impedance Audiometry on Neonates

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There are varying opinions about theories that the middle ear of Neonates is filled with mucous or other Material that interference with normal mobility of the middle ear system. DeDMon reported on the acoustic reflex as a tool for Neonatal screening, and Keith investigated the Middle ear function of Neonates during first few hours of life with an Electroacoustic impedance bridge.

There are no reports on Neonates in Impedance Audiometry in Korea. We tested 100 Neonates less than 24 hours old and this paper is dealt with its study related with tympanogram, static compliance and acoustic reflex.

6. Studies in Impedance Audiometry on Children Less Than 6 Years Old

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Since the clinical application of Impedance measurement by Metz in 1946. Many scholars carried out investigations. Brooks reported on the clinical studies of Impedance on 1053 children, Jerger evaluated on 398 children less than 6 years old, and Cooper studied on the abbreviated screening technic for school children.

In Korea, Seoul National University Medical School reported on the experimental studies of Impedance with Madsen acoustic bridge (20~70) on 1976, and we reported on the clinical evaluation on 1023 school children aged between 7~14 with Teledyne Impedance bridge on 1976.

This paper is dealt with the studies of Impedance

bridge as 110 of children less than 6 years.

7. Experimental and clinical studies with impedance audiometry; the increase in air volume in the middle ear air system and the pneumatization of human temporal bones

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The vibratory energy introduced into the external ear canal is changed by the mechanical factors of eardrum itself, the motility of ossicles, and the air cushion of tympanic cavity and the like.

This study was designed to investigate the volume of middle ear cavity and mastoid air cell system as a factor of determining the acoustic impedance of middle ear system. The author studied how the increase in air volume of middle ear cavity effects on the acoustic impedance of middle ear system with dogs' ears and researched the correlation between the degree of pneumatization of temporal bones and the acoustic impedance of middle ear system by comparing the radiological findings of pneumatization (Law's and Towne's projection) with the acoustic impedance measurements with Madsen ZO 70.

The result is as follows:

1. The tympanometric findings in control state revealed the curves of type A, and did not change in its configuration by the increase in the air volume of dogs middle ear system.

2. The static compliance of middle ear revealed a distinct and linear increase in proportion to the increase in air volume of middle ear system; the rate of increase was 0.05 ± 0.02 cc of static compliance per cc of air volume.

3. Authenticated in the above result and the tendency to increase in static compliance in proportion to the increase in the degree of pneumatization of temporal bones, there was significant regression equation between the degree of pneumatization of temporal bones (x variable) and the static compliance

of middle ear system; $y = 0.19x + 0.16 \pm 0.05$

It is suggested that the difference in volume of middle ear system plays an important role in the change of the static compliance of middle ear, and the author concludes that the measurement of static compliance of middle ear has clinical value as diagnostic means of evaluating the degree of pneumatization of temporal bones along with some radiological examination.

8. Clinical study of Type C in Impedance Audiometry

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Since Metz first introduced the concepts of Impedance Audiometry in 1946.

Many pioneers studied for the development of the acoustic Impedance bridge. It is now widely used in clinical audiology and it plays an important role in otology.

Recently there was the literature stated on normal value of various test \bar{c} Impedance. This paper is dealing with the clinical evaluation of type \bar{c} in comparison with following subjects as;

1. Comparison with the otoscopic finding.
2. Correlation with the pure tone audiometry.
3. Correlation with the stapedial reflex.
4. Correlation between pathologic negative pressure range and middle ear fluid.

9. The clinical study for hearing handicaps by Goodman classification

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Many persons, both children and adults, suffer from impaired hearing. The handicaps that arise from this are economic, educational and above all,