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## Do Hoarse Children get Voice Problems in Adulthood?

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Håkansson B Å and Kitzing P. Do hoarse children get voice problems in adulthood? Acta Otolaryngol (Stockh) 1984; 412: 43-45.

A retrospective investigation of 50 patients with hoarseness complaints during childhood was carried out regarding prognosis, duration and form of trouble. The treatment was limited to voice hygienic advice. The patients were reexamined after puberty and it transpired that the majority had improved spontaneously. Only two female cases displayed remaining nodules and one man and three women had milder grades of dysphonia. The complaints seem to have disappeared shortly after the initial examination for the majority of cases and therefore surgical measures or other kinds of treatment would seem to be superfluous.

Key words: Vocal nodules, hoarseness, dysphonia.

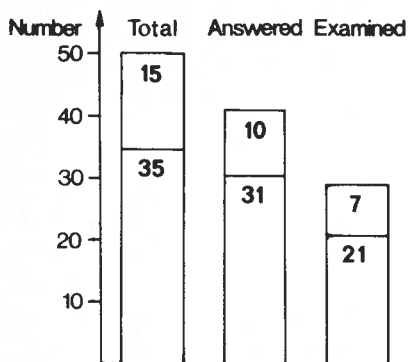
There seems to be very divergent views in the treatment of children with so called nodules on the vocal cords or children with dysphonia only in different parts of the world. Some physicians in Japan and the United States advocate an active line after diagnosis involving surgical trimming of the vocal cords at an early stage, others retain the services of a logopedist or speech therapist in order to change the voice pattern, and others again only offer information in the shape of voice hygienic advice to patient and parents.

Nodules on the vocal cords is commonly regarded to originate from a hyperfunction within the larynx. It is possible there is a predisposed personality factor behind the behaviour of some children who try and domineer the surrounding with their voices.

According to Wilson (1979) there are three development stages during which the vocal cords change. In the first stage there is a reddening of the vocal cords mainly at the edges followed by an increase in volume which can be transformed to fibrous tissue possibly with developed nodules. The pathophysiological origin is regarded to be iterative microtraumata due to the abnormally strong contact forces between the vocal cords during adduction.

The irregularities on the vocal cords in the shape of clearly defined nodules, or what seems to be more common, spool-shaped swellings are localized in the middle of the swinging part of the vocal cords, i.e. where the swinging amplitude is the greatest. The changes are normally completely symmetrical.

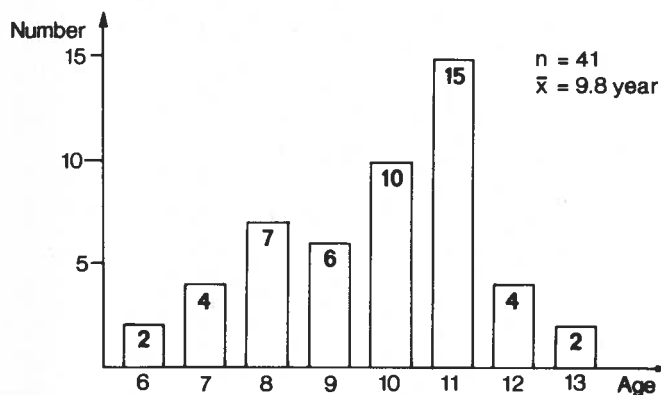
Fig. 1



*70L Log & Phon 73 69  
Kard vid sijn Huddinge  
141 88 stäm*

The investigation is based on some fifty patients with the diagnosis child hoarseness with or without nodules who have been admitted to the Department of Phoniatics at Malmö General Hospital. The treatment was as a rule limited to voice hygienic advice. The material for the investigation has been put together from 1) notes from the medical files 2) a special questionnaire 3) indirect laryngoscopy and sometimes stroboscopy 4) comparison of tape recordings from the initial examination and the follow up. 50 patients were deemed suitable for the investigation. 35 were boys and 15 girls. Out of these 50 it was not possible to establish any contact with 9 people which can be regarded as a loss (18%) (fig. 1). All the patients we managed to contact participated in the investigation by filling in the questionnaire and the majority were also examined at the clinic. Thus we had response from 31 men and 10 women, of which 21 men and 7 women were examined by indirect laryngoscopy. The age distribution at the initial examination at the Department of Phoniatics is shown in fig. 2, the over all average age being 9.8 years. The two youngest patients were 6 years and the two oldest 13 years. The latter showed no signs of puberty according to the notes in the medical files.

Fig. 2



The time span (in years) between the initial examination and the follow up was on average 9.3 years which ought to be an adequately long time of observation. Patients with remaining problems have been reexamined at the earliest 8 years after the initial visit.

From the medical files we found that 8 patients (16%) either had problems with school work, psychiatric problems or delayed speech development or any combination of these. At the initial visit 83% of the boys and 73% of the girls were reported as being vociferous.

Only two girls admitted to having hoarseness trouble while as many as 22 patients denied having any voice problems. From the questionnaire it transpired at the follow up that previously 22 of the patients had answered the question of subjective trouble in the affirmative, 15 of the boys and 7 girls. Thus, there was no congruence between the anamnesis at the initial visit and the patient's recollection of the trouble.

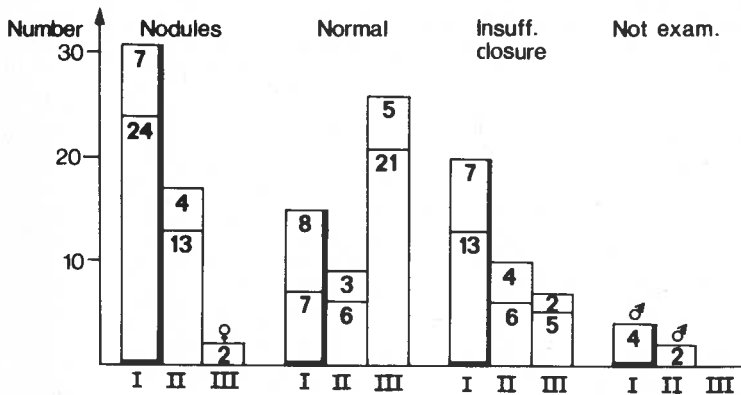
To the question: "Have you ever nowadays any voice problems or feelings of irritation or tiredness in the throat which can not be attributed to a cold", 29 or 71% of the patients answered in the negative. Of the remainder who felt they still had suchlike problems 8 thought they had improved while 4 patients reported a status quo. Every one stated that throat or voice problems never caused any sick leave.

At the initial examination all patients had a more or less pronounced form of dysphonia. In spite of the great number of patients with periodically recurrent throat or hoarseness problems objective dysphonia was only found with one man and three women at the supervisory control.

Of these the man and one women was found to have a slightly better voice quality when comparing the different tape recordings. Relatively speaking this means 9 times more women than men retain the dysphonia but over all this only accounts for 14% of the examined patients.

Figure 3 shows the results of the indirect laryngoscopy. The first column indicates that at the initial examination 62% had nodules on the vocal cords. The second column represents the corresponding figure for those who were subjected to indirect laryngoscopy at the later occasion. As can be seen from column three only two women were found to have nodules at the re-examination. The following three columns show similarly the number of patients with whom no nodules were found.

Fig. 3



A defective closure in the shape of internus-insufficiency or a transversus-aperture was found with 40% at the initial examination while at the supervisory control 25% displayed mainly a transversus-aperture.

At the initial examination the occurrence of nodules was significantly higher with boys than with girls. However, there seems to be a complete turn-around at the reexamination where nodules were only found in two female cases. Admittedly, the material is not sufficient to prove a significant difference in the sex ratio.

Roughly half of the patients could tell when their voice problems disappeared. The average age when the voice problems had ceased to cause problems was 12.1 years for boys and 10.7 years for girls, i.e. just about the time difference when entering puberty.

The investigation indicates that the objective changes are regressing markedly. Specifically, the occurrence of nodules diminish after puberty while on the other hand the defective closures are not disappearing at the same rate. Also, it seems that there is a tendency that girls more often have persistent larynx changes. The objectively registered dysphonia diminished markedly with age and with the corresponding difference between the sexes.

The absence of voice problems were probably prevalent rather early in life for most examinees which would suggest that surgical treatment or prolonged logopedic care in most cases are uncalled for. At least this is true for most boys while the girls should probably be reexamined in case any other steps should be taken.