Original Article

Gender differences and delay in presentation of childhood squint

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Abstract

Objective: To assess gender differences and delay in presentation of childhood squint in a tertiary care hospital

Methods: It was a series of children presenting with squint at the Aga Khan University Hospital, Karachi, Pakistan. We retrospectively studied the cases presenting between February 2000 and July 2007.

Results: A total of 107 children with squint were seen. Of these, 55 (52.4%) were girls. A statistically significant difference was observed between the mean age at presentation (± SD) of boys and girls (3 years and 5 months vs 4 years and 5 months p:<0.05). Girls had a greater mean (SD) and median (range) delay in squint presentation than had boys (2year 4months ±3 years vs 3 years ±2 year 8 months) and 2 year 3 months (1 month to 12 years) vs 1 year 3 months (1month to 14 years), respectively. Overall amblyopia was present in 25.3% (23/91) children. Girls also had a higher burden of amblyopia compared with their male counterparts though the difference was not statistically significant (P= 0.09).

Conclusion: There was a significant gender difference in age at presentation of childhood squint in our study.

Introduction

Childhood squint is a common ophthalmic disorder. If untreated, squint can cause amblyopia (lazy eye) and permanent loss of vision. Studies have reported the prevalence of amblyopia to be as high as 50% in children with esotropia and 20%[1] in children with exotropia.[1-3] In most cases the treatment of squint involves correction of any refractive error and occlusion therapy to improve vision and squint surgery, if required.

Despite the importance of early detection and intervention, children with squint in developing countries present late. For example, in a study conducted in Peshawar, Pakistan, age at presentation was more than 5 years in the majority of children with squint.[4] This is in sharp contrast to findings from studies in western settings where the mean age at presentation varies from 2 to 5 years.[1,5,6]

Gender bias in health care has been widely reported. Studies of health care utilization in developing countries suggest that gender discrimination is widespread in children.[7]

This study aimed to determine gender differences and delay in presentation of childhood squint presenting at the Aga Khan University Hospital Karachi.

Methods

It was a retrospective case series of children presenting with squint between February 2000 and July 2007. We included all diagnosed childhood squint cases except those with a previous history of squint surgery or those with suspected squint secondary to trauma or nerve palsy. We used medical records to collect data on demographic variables, age at presentation, delay in presentation, type of squint, presence/absence of amblyopia, refraction, and birth weight. Data were recorded by two of us (AK, MBSK) on a standard proforma. We used standard definitions for squint, and amblyopia. techniques.[8] Age at presentation was based on the current age at the time of presentation to clinic. Delay in presentation was defined as the time between the onset of squint and presentation to the clinic.

Statistical analysis: The data were entered and analyzed using SPSS version 15.0 (SPSS Inc., Chicago, IL). Mean, standard deviation, median, and range were calculated for age at presentation and delay in presentation. Frequencies and proportions were calculated for categorical variables. Proportions were compared using chi square test and means were compared using t-test.

Results

One hundred and seven children with squint presented to our clinic between 2000 and 2007. Of these, 52 (48.6 %) were

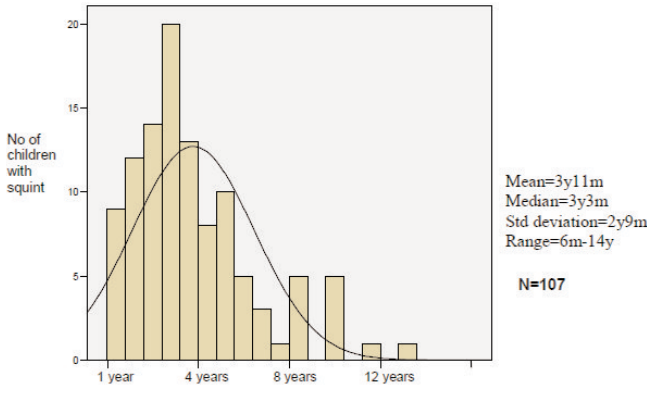

Figure: Age at presentation of childhood squint.

Table: Demographic and clinical characteristics of children presenting with squint at a tertiary care hospital in Pakistan.

	Frequency	Gender		Total no "n"
		Male (n=52)	Female (n=55)	
Type of squint				
Divergent	24	10	14	107
Convergent	68	36	32	
Pseudo squint	15	6	9	
Constant	22	6	16	92
Alternating	70	40	30	
Manifest/latent				
Tropia	84	43	41	92
Phoria	8	3	5	
Family history*				
Yes	11	5	6	83
No	72	31	41	
Inferior oblique over action in convergent squint				
Yes	27	13	14	68
No	41	23	18	

* Information regarding first degree family history was available in only 83 cases.

boys and 55 (52.4 %) were girls (Table). Their mean (±SD) age at presentation was 3 years and 11 months ± 2 years (Figure).

A statistically significant difference was seen between the mean age at presentation (± SD) of boys and girls (3 years and 5 months vs 4 years and 5 months P: <0.05). The median age (range) of girls was also greater than that of boys (4.0 years [6 months to 12 years] vs 3.0 years [6.0 months to 14 years]). Data on the duration between onset of squint and presentation to our clinic was available for 62 cases: Girls had a greater mean (SD) and median (range) delay than boys (2 year 4 months ±3 years vs 3 years ± 2 year 8 months) and 2 year 3 months (1 month to 12 years) vs. 1 year 3 months (1 month to 14 years), respectively.

Overall amblyopia was present in 25.3% (23/91) of children with squint. Girls also had a higher prevalence of amblyopia compared with their male counterparts (30.9% [17/55] vs. 17.3% [9/52]), although the difference was not statistically significant (P=0.09). In addition, 63.6% (14/22) children with unilateral squint had amblyopia compared with 13.0 % (9/69) children with alternating squint.

Convergent squint was the most common type of squint. It was present in 63.6% (68/ 107) cases. Fifteen children had pseudosquint. Of the remaining 92, 76.1% had alternating squint while 23.9% had unilateral or constant squint (Table 1). Eighty four (91.3%) children had tropia while 8 (9.7%) had phoria. Overall alternating esotropia was the most common type of squint, followed by alternating exotropia.

Data on refraction were available for 90 out of 107 patients. Most of the children with diagnosis of convergent squint (42/ 56 or 75.0%) had hypermetropia.

Discussion

Our study revealed that girls with squint presented much later compared to their male counterparts. They also had a higher prevalence of amblyopia. This difference may be due to the preference of boys over girls in our society. Girls usually present when there is significant deviation of eyes causing social stigma. A study conducted in USA[9] showed no gender difference in age at diagnosis of childhood intermittent exotropia. There is paucity of literature on gender differences and delay in presentation of childhood squint. In few reported studies, there is significant variation in age at presentation which could be explained by differences in socioeconomic status and health care seeking behaviour. The mean age at presentation varies between two and a half years and 5 years in studies done in UK[5] and Singapore.[1] The age at presentation in our study also falls in the same range.

Another striking finding of our study was that there was a major delay in presentation of squint (median delay = 2 years). The delay could be due to poor awareness among people regarding squint and its treatment or due to lack of proper health referral system and paucity of trained workers and eye care services. Early diagnosis and treatment are important to prevent amblyopia and other complications associated with squint. In Pakistan there is no screening programme for the assessment of visual acuity and squint for children of school going age or before. Squint can affect visual acuity which can further affect child's performance at school, in sports and other activities. Most of the squints are associated with refractive errors, early correction of which can be beneficial in many cases. In our study, there was a higher prevalence of amblyopia in girls than boys. This is in contrast to a study done in the UK which showed that more boys as compared to girls presented with strabismic amblyopia. The study also showed that boys were significantly older (median 4.93 years) than girls (median 4.15 years, p=0.014) at presentation.[10]

Our study had the following limitations. First, it is a single center study and it might not be possible to extrapolate the results to the general population. Similar studies in the public sector are needed. Second, information regarding age at onset of squint was based on recall of patients/parents, therefore there is a likelihood of recall bias, which could not be eliminated.

Conclusion

There was a significant gender differences in age at presentation of childhood squint in our study. Further research is recommended to explore the reasons for this gender difference and delay in presentation.

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