Acta Orthop Scand 1988;59(4):417–418

Screening for scoliosis

Barry Ferris[1], Michael Edgar[2] and Anthony Leyshon[3]

We compared two groups of consecutive patients presenting to a scoliosis center: viz., 214 children from 1974 to 1978 and 100 children from 1984 to 1986. The number of curves detected by school screening increased from 10 percent to 33 percent, and the size of the curves at presentation decreased from 49 to 33 degrees. Half the curves were still detected by families and friends. School screening for scoliosis has increased detection of curves at an early stage when bracing may be successful.

School screening for adolescent idiopathic scoliosis is routine in many countries, such as Canada (Rogala et al. 1978), Sweden (Willner and Udén 1982), Denmark (Lauland et al. 1982), and Singapore (Daruwalla et al. 1985), and is mandatory in some States of America (Bunnell 1984, Rogala et al. 1978, Willner and Udén 1982) and in Japan (Lonstein et al. 1982). Torrell et al. (1981) found the detection rate in 1968 to be 45 percent, which, 10 years later, had increased to 70 percent after school screening and a publicity campaign in Sweden, compared with only 10 percent in this country between 1974 and 1978 (Belstead and Edgar 1978).

Hoping that our situation has also improved, we compared two consecutive groups of idiopathic scoliosis presenting to the same scoliosis center, but separated by 9 years.

Patients and methods

The records of 100 consecutive new patients referred to the Royal National Orthopaedic Hospital between 1984 and 1986 with a diagnosis of adolescent idiopathic scoliosis were reviewed and compared with 214 patients presenting between 1974 and 1978. The age of the patient at diagnosis, the person who first noticed the deformity, and the Cobb angle at presentation were recorded in all the cases (Table 1).

The number of curves under 40° at presentation was recorded, as curves of this magnitude are less likely to require surgery. The last group does not include the patients from the 1978 study because the deformity was not apparent then; but in the 1984 to 1986 review, this group was identified.

Results

The number of diagnoses made incidentally by general practitioners had not changed between the two studies, but the number detected by screening showed more than a threefold increase over the previous one (Table 1). Curves detected by family or friends remained the largest group. There has been a concomitant reduction in the average size of curve at presentation between the two studies. The age at diagnosis remained the same.

Table 1. Patients referred to the Scoliosis Unit with adolescent idiopathic scoliosis. (1974 to 1978, n 214; 1984 to 1986, n 100)

Diagnosed by	Percentage		Cobb angle (SD)		Percentage under 40°	
	1976	1985	1976	1985	1976	1985
Incidentally by doctor	10	14	56 (18)	40 (15)	12	50
School screening	10	32	49 (15)	33 (13)	25	72
Family/ friends	80	49	56 (16)	44 (17)	15	37
Teacher	–	5	–	53 (19)	–	0

The Whittington Hospital, Royal National Orthopaedic Hospital, and Hospital for Sick Children, London, England

Correspondence: Barry Ferris, M.S., F.R.C.S., 119 Green Lane, Edgware, Middlesex, HA8 8YY England

Discussion

There is little doubt that around the world school screening has produced effects similar to ours (Lonstein et al. 1982, Torrell et al. 1981). The main advantage of diagnosing adolescent idiopathic scoliosis early is that, providing it is effective (Edgar 1985), bracing stands a better chance of success if started at a time when growth potential remains (Rogala et al. 1978, Blount 1981). The improvement in our referral pattern is probably due to increased awareness of scoliosis among doctors and the general public. However, our threefold increase in the proportion of curves detected by screening amounted to only one third of the total, whereas in Sweden where a policy of school screening exists, two thirds of the curves were thus detected (Torrell et al. 1981). A report by the British Orthopaedic Association and British Scoliosis Society (1983) concluded that it should not be national policy routinely to screen for scoliosis and that more data are required. We feel that our data adds weight to the case for a national policy for school screening.

References

Belstead J S, Edgar M A. Early detection of scoliosis. Br Med J 1978;2(6142):937–8.

Blount W P. The virtue of early treatment of idiopathic scoliosis (Editorial). J Bone Joint Surg (Am) 1981; 63(3):335–6.

Bunnell W P. An objective criterion for scoliosis screening. J Bone Joint Surg (Am) 1984;66(9):1381–7.

Daruwalla J S, Balasubramaniam P, Chay S O, Rajan U, Lee H P. Idiopathic scoliosis. Prevalence and ethnic distribution in Singapore schoolchildren. J Bone Joint Surg (Br) 1985;67(2):182–4.

Edgar M A. To brace or not to brace? (Editorial). J Bone Joint Surg (Br) 1985;67(2):173–4.

Laulund T, Søjbjerg J O, Hørlyck E. Moiré topography in school screening for structural scoliosis. Acta Orthop Scand 1982;53(5):765–8.

Lonstein J E, Bjorklund S, Wanninger M H, Nelson R P. Voluntary school screening for scoliosis in Minnesota. J Bone Joint Surg (Am) 1982;64(4):481–8.

School screening for scoliosis. Br Med J (Clin Res) 1983;287(6397):963–4.

Rogala E J, Drummond D S, Gurr J. Scoliosis: incidence and natural history. A prospective epidemiological study. J Bone Joint Surg (Am) 1978; 60(2):173–6.

Torell G, Nordwall A, Nachemson A. The changing pattern of scoliosis treatment due to effective screening. J Bone Joint Surg (Am) 1981;63(3):337–41.

Willner S, Udén A. A prospective prevalence study of scoliosis in Southern Sweden. Acta Orthop Scand 1982; 53(2):233–7.