RESULTS

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This work was carried out on 100 players, sharing in different types of sports. Thirty of them (30%) were football male players, twenty five of them (25%) were weight lifters male players, twenty of them (20%) were tennis players (10 males and 10 females) and twenty five (25%) of them were volleyball players (15 males and 10 females). Their age varied between 18 and 28 years with a mean age 24 $\pm$ 2.8 years.

Forty of these players (40%) were complaining from low back pain as a current or a previous symptom, 9 (9/40%) of them were football players, 15 of them (15/40%) were weight lifters, 9 of them (9/40%) were tennis players and 7 (7/40%) were volleyball players.

The maneuvers during playing were:

Twisting : Mainly in tennis player and less common in football players.

Hyperextension : Mainly in volleyball players and less common of in football players.

Lifting : Mainly in weight lifters

Jumping : Mainly in football and volleyball players.

A control group of 100 persons (50 males and 50 females), age and sex matched to our patient. Twenty-five of these subjects (25%) complained of low back pain as a current or previous symptom.

The results of our study are tabulated and the following observation was noticed :-

Table (1)

The prevalence of low back pain in the study and control groups. In the study group, the age ranged between 19-28 years, the prevalence is higher in weight lifter (60%). In tennis the prevalence is higher in female (5) than male (4).

In the control group the age ranged between 19-27, two of them were diagnosed as inflammatory spondyloarthropathies.

Table (2)

Statistical analysis of prevalence of low back pain in study and control groups.

In weight lifting and tennis, there is significant difference in the prevalence of low back between them and control group ($P < 0.05$)

Table (3) :

Comparison between causes of LBP in the study and control group.

High incidence of disc prolapse (35%) was observed between players. In the control group, muscle strain (30.4) was mostly observed. Back muscle strain was present in (2/10) in football players, (2/10) in weight lifters, (4/10) in tennis players and (2/10) in volleyball players. Disc prolapse was present in (3/14) in football players, (6/14) in weight lifters, (2/14) in tennis players and (3/14) in volleyball players. Ligamentous

sprain was present in (3/8) in football players, (2/8) in weight lifters, (1/8) in tennis players, (2/8) in volleyball players.

Spondylolisthesis was present in (1/8) in football players, (5/8) weight lifter and (2/8) in tennis players.

Table (4) :

Radiological changes in the study and control groups.

There is significant difference ($P < 0.05$) between the study and control groups as regard loss of lumbar lordosis, fracture of pars interarticularis and spondylolisthesis.

Table (5) & Fig. (1-1)

Mean values of measurement of normal vertebrae from thoracic 11 to lumbar 5 as regards wedge, biconcavity and compression.

Table (6) & Fig. (1-2)

Mean values of measurement of vertebrae of the control group from thoracic 11 to lumbar 5 as regards wedge, biconcavity and compression.

Table (7) & Fig. (1-3)

Mean values of measurement of vertebrae of the study group from thoracic 11 to lumbar 5 as regards wedge, biconcavity and compression.

Table (8)

Comparison between number and percentage of vertebral deformities in the study and control groups. Vertebral deformities were present in 8/40 players (20%), while they were found in (2/23) persons of the control group (8.6%).

In study group, 8 players representing 12 type of deformities, while in control group 2 persons were representing 3type of deformities.

Measurement of vertebral deformities:

Wedge deformity = (hp –ha) hp × 100

Biconcavity deformity = (hp –hm) hp × 100

Compression deformity = (hp'-hp) hp' ×100

Fig. (2)

In the study group, vertebral deformities were present in 8 players as follow:

In football	2 vertebral deformities
In weight lifter	4 vertebral deformities
In tennis	1 vertebral deformities
In volleyball	1 vertebral deformities

Fig. (3,4)

Shows fracture of pars interarticularis and spondylolisthesis.

Fig. (5)

Shows loss of lumbar lordosis.

Fig. (6)

Shows scoliosis.

Table (1)

Prevalence of low back pain in the study and control groups

Studied groups	Sex	Mean age in yrs* ± SD	**Mean duration in playing in yrs**	Number %
(A) Study group.				40/100 40
1- Football	Males	23.6 ± 2.4	5.6	9/30 30
2- Weight lifting	Males	26.1 ± 1.4	6.2	15/25 60
3- Tennis	4 males 5 females	19.7± 1.9 21 ± 1.2	5.8 5.7	9/20 45
4- Volleyball	4 males 3 females	23.5 ± 0.5 26 ± 0.8	7.4 6.7	7/25 28
(B)Control group.	10 males 15females	23.4 ± 0.5 26 ± 0.8		25/100 25

N.B : yrs* = years

Table (3) :

Comparison between causes of LBP in the study and control group.

Causes of LBP / Studied GPS	Study group(40)		Control group.		Stat. analysis	
	No.*	%	No.*	%	Z	P
1-Back muscle strain	10	25.0	7	30.4	0.133	>0.05
2- Ligamentous sprain	8	20.0	6	26.1	0.338	>0.05
3- Disc prolapse	14	35.0	2	8.6	2.545	<0.05
4- Spondylolisthesis	8	20.0	1	4.3	1.9732	<0.05
5- Posture	0	0	7	30.43	1.744	>0.05

N.B. : No.* = Number

Table (4) :

Radiological changes in the study and control groups.

Studied GPS / Radiological changes	Study groups		Control GPS		Stat. Analysis	
	No.	%	No.	%	Z	P
1- Scoliosis	3	7.5	1	4.3	0.030	>0.05
2- Loss of lumbar lordosis	20	50.0	3	13.1	2.983	<0.05
3- Fracture of pars interarticularis and Spondylolisthesis	8	20.0	1	4.3	1.991	<0.05

N.B. : No.* = Number

GPS. : Groups.

Table (5):-

Mean values of measurement of normal vertebrae from thoracic 11 to lumbar 5 as regards wedge, biconcavity and compression.

Measurement / Vertebral Number	Wedge	Biconcavity	Compression
T_{11}	13.2 ± 1.5	14.2 ± 1.5	1.6 ± 0.6
T_{12}	13.5 ± 1.4	14.3 ± 0.9	1.7 ± 0.6
L_1	13.0 ± 1	13.8 ± 1.9	1.7 ± 0.3
L_2	12.8 ± 1	14.1 ± 0.8	1.9 ± 0.5
L_3	12.6 ± 0.7	13.4 ± 0.9	1.7 ± 0.3
L_4	12.6 ± 0.8	12.6 ± 0.8	1.6 ± 0.4
L_5	13.4 ± 1.4	14.2 ± 1.5	1.8 ± 0.2

Table (6)

Mean values of measurement of vertebrae of the control group from thoracic 11 to lumbar 5 as regards wedge, biconcavity and compression.

Measurement / Vertebral Number	Wedge	Biconcavity	Compression
T_{11}	12.9 ± 1.5	14.4 ± 0.8	1.8 ± 0.5
T_{12}	13.6 ± 1.1	14.2 ± 1.2	1.8 ± 0.6
L_1	13.7 ± 1.3	14.2 ± 0.9	1.7 ± 0.5
L_2	11.5 ± 1.3	13.9 ± 1.2	1.7 ± 0.7
L_3	12.4 ± 1.5	13.1 ± 1.1	1.8 ± 0.6
L_4	13.1 ± 0.9	14.2 ± 0.9	2.8 ± 0.5
L_5	12.5 ± 1.4	13.4 ± 1.1	2.1 ± 0.6

Table (7)

Mean values of measurement of vertebrae of the study group from thoracic 11 to lumbar 5 as regards wedge, biconcavity and compression.

Measurement / Vertebral lumber	Wedge	Biconcavity	Compression
T_{11}	13.6 ± 1.7	14.1 ± 0.8	1.7 ± 0.5
T_{12}	13.3 ± 1.6	13.7 ± 1.2	1.7 ± 0.6
L_1	13.2 ± 0.9	13.6 ± 1.6	2.4 ± 0.7
L_2	13.1 ± 1.6	14.5 ± 1.7	1.9 ± 0.8
L_3	13.6 ± 0.9	14.7 ± 1.1	2.1 ± 0.6
L_4	13.6 ± 1.2	14.8 ± 1.3	1.7 ± 0.7
L_5	13.7 ± 0.9	15.1 ± 0.8	2.1 ± 0.4

Table (8)

Comparison between number and percentage of vertebral deformities in the study and control groups.

Studied group / Deformity type	Study group		Control group		Stat. Analysis	
	No.* %	**Vertebra affected**	**No.* %**	**Vertebra affected**	Z	P
Compression alone	**2 25**	L_3, L_4	1 50	T_{12}		
Wedge alone	**1 12.5**	T_{11}	0 0			
Biconcavity alone	**1 12.5**	L_3	0 0			
Compression + Wedge	**1 12.5**	T_{12}	1 50	L_2		
Compression + Biconcavity	**1 12.5**	L_2	0 0			
Wedge + Biconcavity	**1 12.5**	L_4	0 0			
All three types	**1 12.5**	L_2	0 0			
Total	**8/40 20**		**2/23 8.6**		0.378	>0.05

N.B. No.* = Number

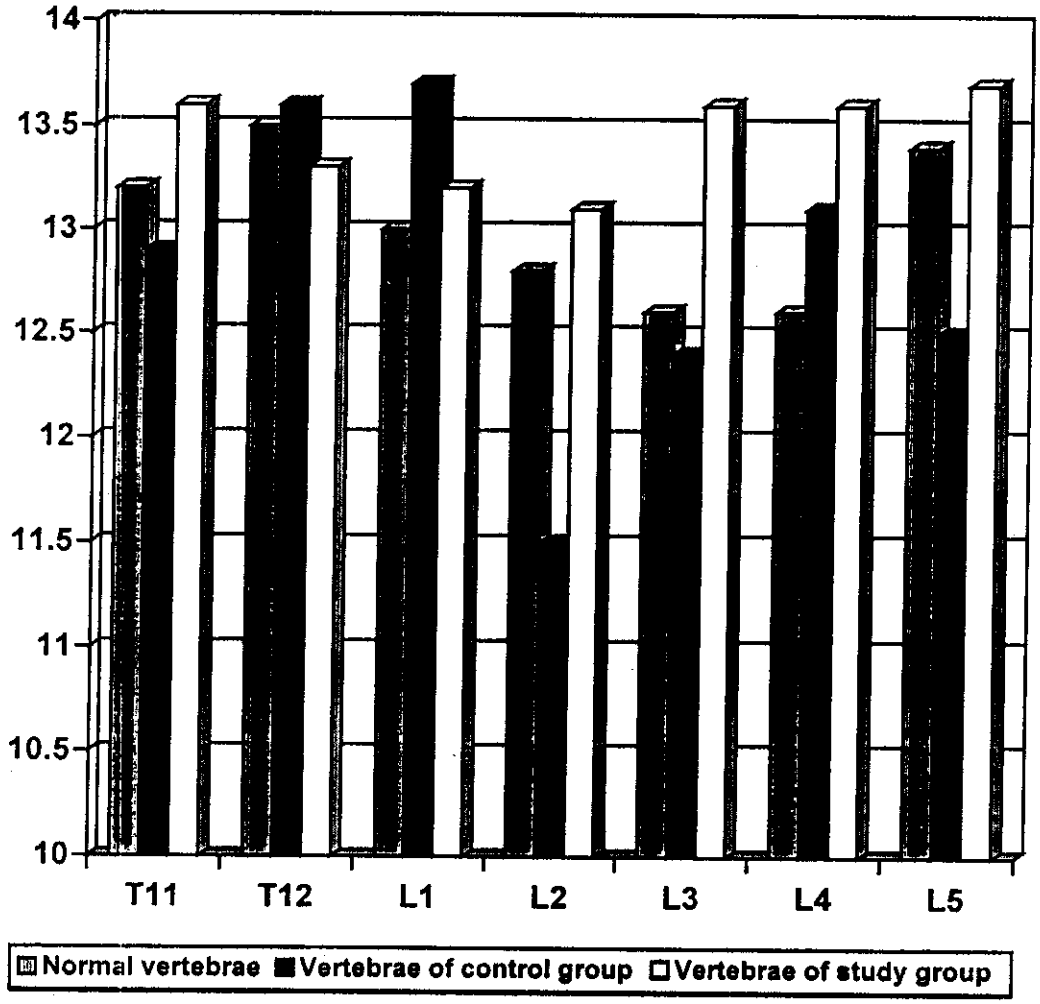

Figure (I-1): Wedge values of normal vertebrae, vertebrae of control group and vertebrae of study group.

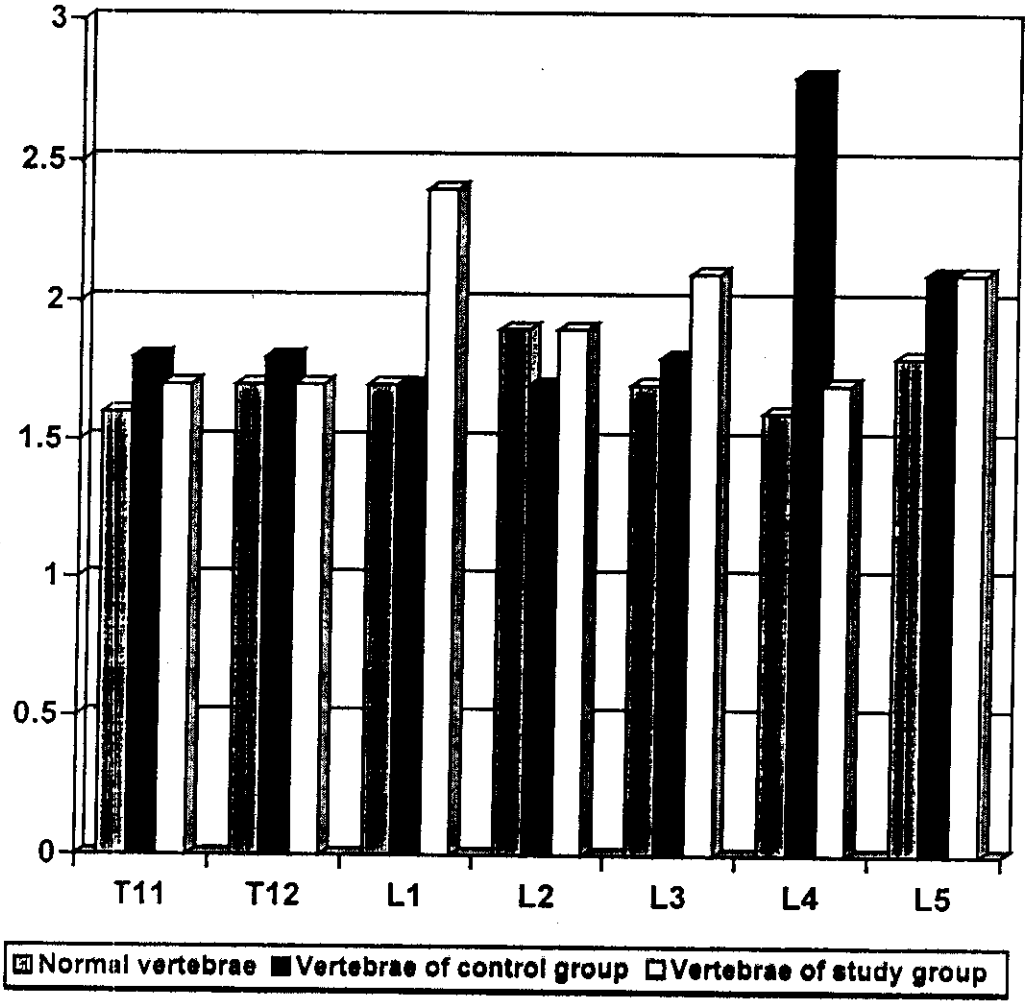

Figure (1-2): Biconcavity values of normal vertebrae, vertebrae of control group and vertebrae of study group.

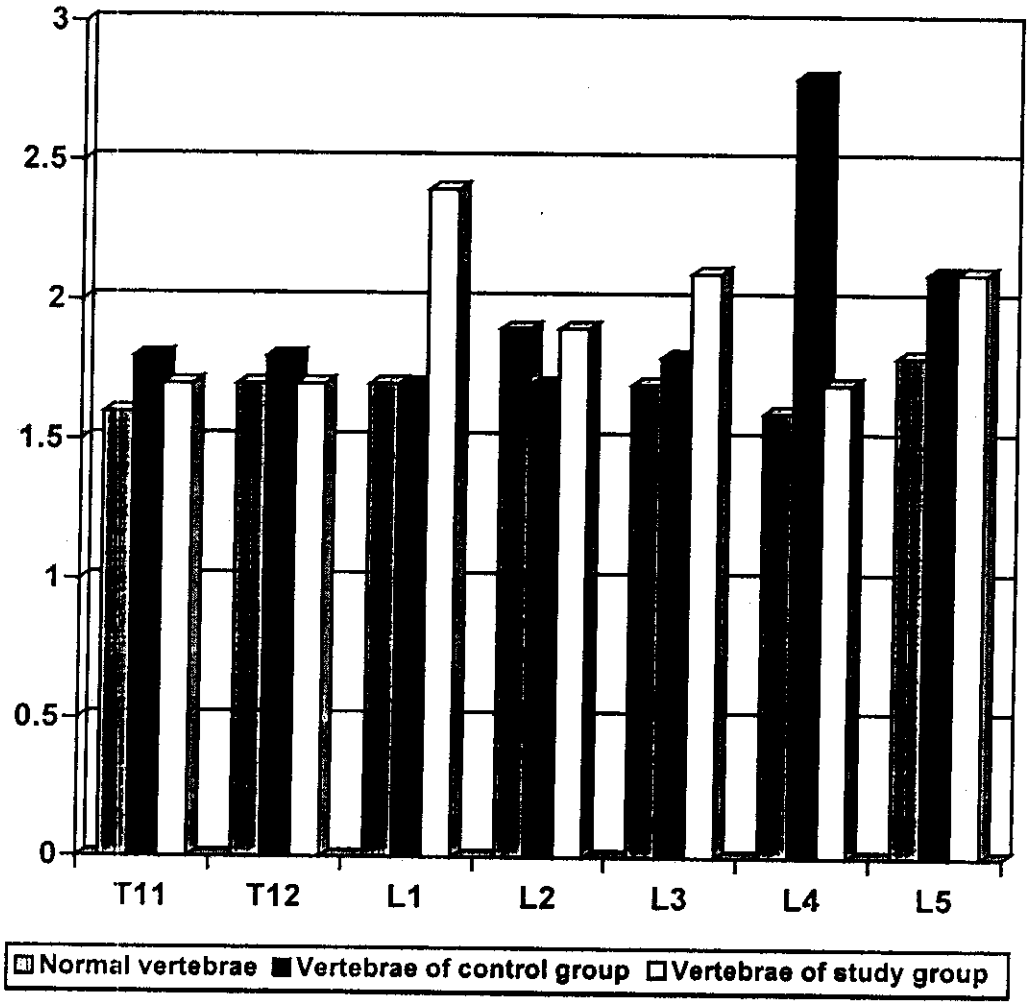

Figure (1-3): Compression values of normal vertebrae, vertebrae of control group and vertebrae of study group.

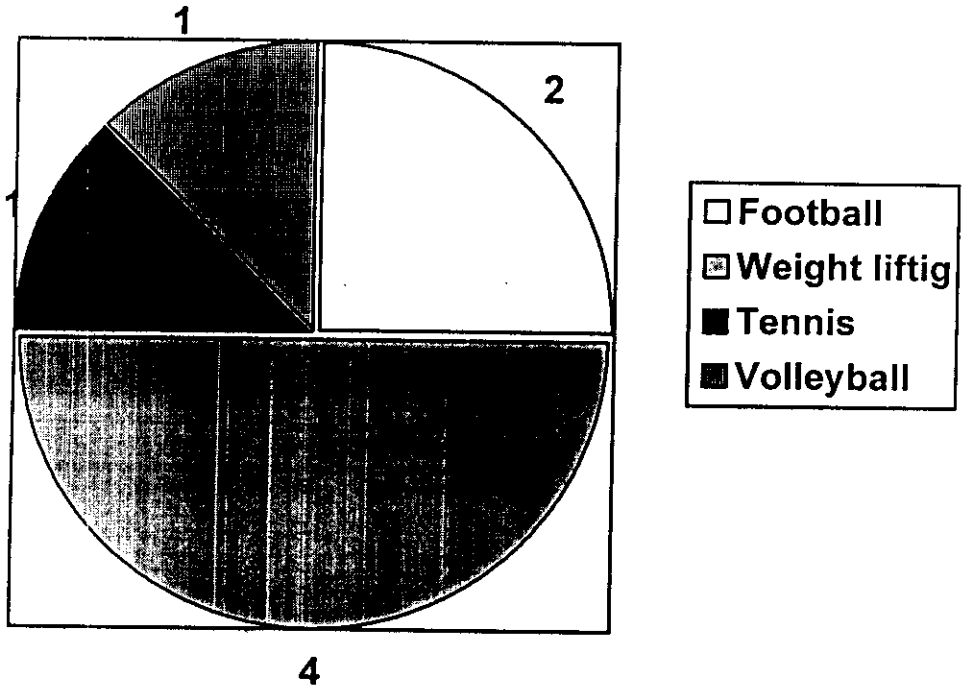

Figure (2): Distribution of vertebral deformities in different sports .

Fig. (3) Shows fracture of pars interarticularis and spondylolisthesis.

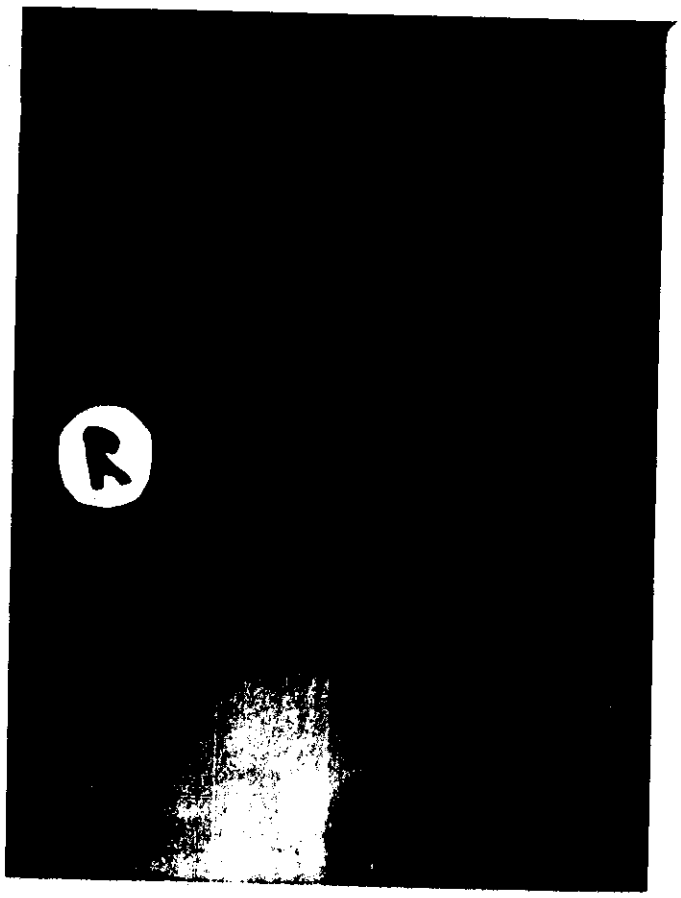

Fig. (4) Shows fracture of pars interarticularis and spondylolisthesis.

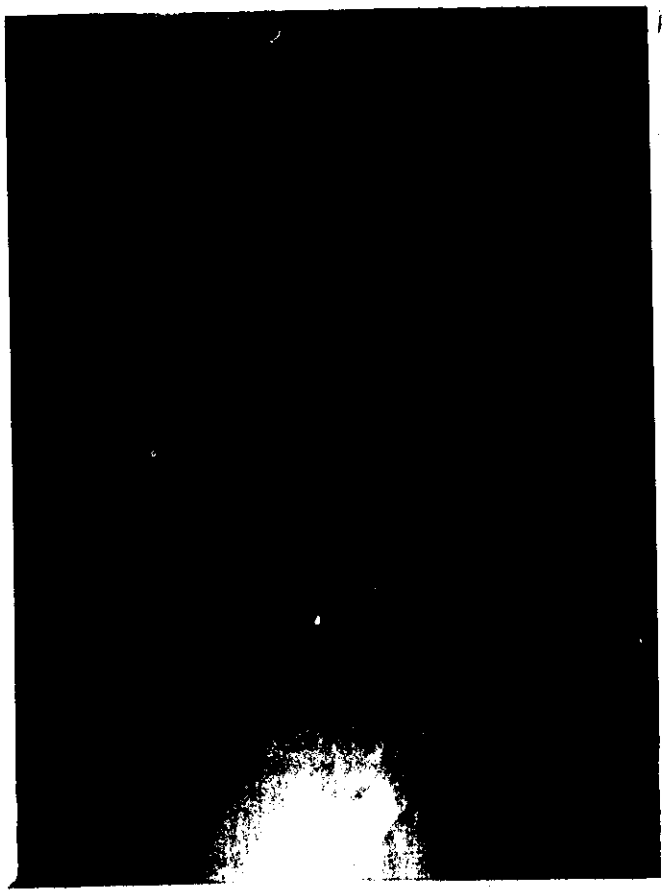

Fig. (5) Shows loss of lumbar lordosis.

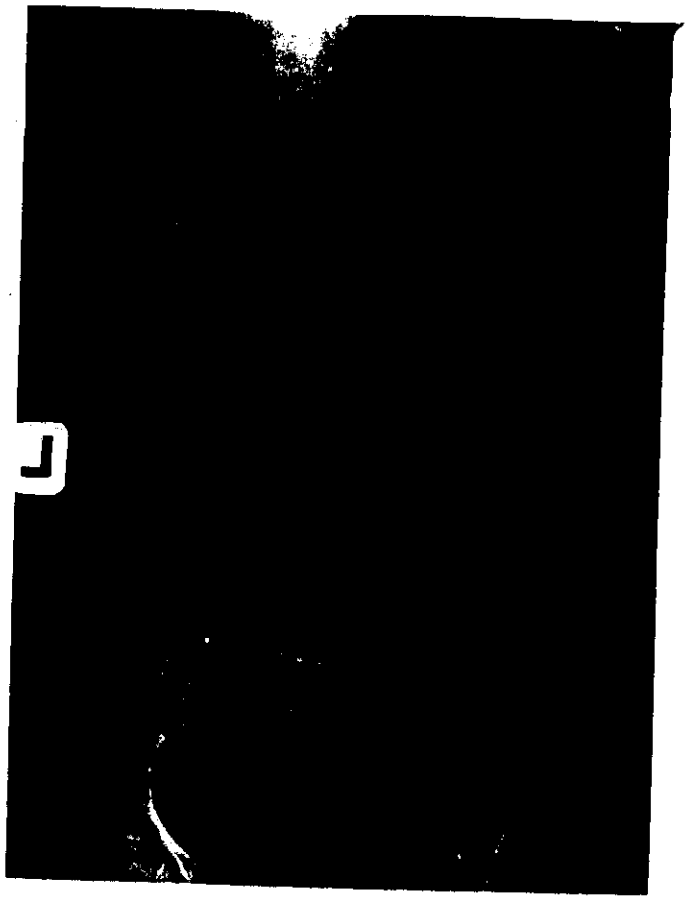

Fig. (6) Shows scolosis. Scoliosis