

SUMMARY

Musculoskeletal System Dysfunction in Patients in Long-Term Remission of Wilms Nephroblastoma

Objective: The objective of this retrospective clinical study was to describe the multidisciplinary program of childhood cancer survivors in their young adult age in an adult-based ambulatory medical setting and to report the latent sequelae of the pathology. The hypothesis is that the treatment with all three modalities (chemotherapy, radiotherapy and surgery) causes the development of the latent effects in varying degrees. The goal of this study was to investigate the typical musculoskeletal system changes of survivors of Wilms Nephroblastoma who had previously received their basic treatment more than 5 years ago.

Design: 151 subjects underwent clinical assessment of body posture, postural tests and evaluation on BalanceMaster® force plate. These tests were conducted in conjunction with other clinical evaluations, namely, pulmonary and renal function tests, immunology deficiency and exercise capacity to seek its relationship to the diseases' risk factors. The correlation between postural findings and the above clinical tests were investigated.

Subjects: Ambulatory patients with a primary diagnosis of nephroblastoma who have undergone treatment greater than 5 years ago.

Settings: Clinics at the University Hospital Motol, Prague where previous oncology treatments were completed between January 1st 1980 and December 31st 2004 at the Department of Pediatric Hematology and Oncology, Prague.

Results: The typical postural pattern of patients who underwent this particular type of oncology treatment was described. The most common postural findings were: trunk shift, pelvic obliquity, inspiratory position of the chest and anterior pelvic tilt. The results support the evidence that patients have a higher incidence of impaired postural findings after radiation. The same group of patients also complained of significant back problems, pain in the joints ($p < 0,05$), even though they underwent physiotherapy. Moreover, 73% of patients who received radiation therapy frequently presented with scoliosis ($p < 0,001$) versus 33% of patients who did not undergo RT. Pulmonary function tests were unexpectedly within normal limits.

Conclusion: The typical postural pattern was described. The most frequent signs of postural dysfunction were considered as: trunk shift in frontal plane, shoulder girdle muscle dysbalance, pelvic obliquity, inspiratory position of the chest, head and pelvic forward drawn position. Latent effects of therapy were seen much more frequently in

patients who underwent radiation and chemotherapy. Overall, the patients were well adapted due to the extensive compensatory capacity of their young age. Procedures like scar treatment, physiotherapy, postural training play a role in the prevention of future functional and structural dysfunction.

Key Words: nephroblastoma, latent effects, musculoskeletal dysfunction, prevention, scar

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