ULTRASOUND ANATOMY AND COMPARATIVE ANALYSIS OF THE THYROID GLAND IN HEALTHY 10-YEAR-OLD CHILDREN

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Annotation: *The thyroid gland refers to the endocrine organs whose hormones are vital. The role of thyroid hormones in childhood and adolescence is especially great – a growing body needs relatively more of them than adults. The study of morphometric parameters of the thyroid gland in children in endemic zones of the Bukhara region showed that the length of the organ in the second period of childhood in boys the growth rate of 2.7 times and in girls 2.8 times, the growth rate of the width of the gland in the second period of childhood in children 2.1 times, the growth rate of the thyroid gland in the second period of childhood in boys 2.6 times and 2.4 times in girls, the growth rate of the organ volume in the second period of childhood in boys by 13.3 times and in girls by 14.3 times, and the height of the isthmus in the second period of childhood in boys and girls is 3.1 times in relation to the newborn age.*

Keywords: *children, thyroid gland, length, width, thickness, volume, ultrasound examination*

INTRODUCTION

The thyroid gland is one of the central organs of the endocrine system, whose hormones regulate metabolism and energy, growth processes, maturation of tissues and organs [1,3]. Constancy in the internal environment is maintained by the endocrine system, which is necessary for the normal course of physiological processes. Endocrine glands act in the body as regulators of general reactions in all cells and tissues, participating in the coordination of the activities of all organs and systems [2,5,6].

At the beginning of the XXI century, WHO put the problem of thyroid diseases on a par with cardiovascular and oncological ones, defining it as the most global and socially significant for humanity. As it is known, the importance of thyroid function for a growing organism is great, therefore, interest in the problem of thyroid pathology among pediatricians and pediatric endocrinologists is determined by a clear tendency to increase thyroid diseases, including in young children [4,7].

In the world, children face one of the important tasks of ensuring their health by assessing the functioning of the thyroid gland and comparing it with indicators of physical development [3,4]. In recent decades, due to regional violations of the global ecological balance, the number of endocrine diseases, including pathological conditions associated with thyroid disorders, has increased significantly [8,9]. In medicine, the concept of "norm"

is important and serves as a starting point for a comparative analysis of the results of the conducted studies. A special place is occupied by the modern expression of the problems of regulatory factors of the human body [5,10].

According to researchers from our country, the prevalence of iodine deficiency diseases in the world, including in Uzbekistan, remains high [1,4]. Thyroid diseases are considered one of the most common pathologies of modern people. The extent of the spread of diseases varies in different geographical and social regions, which largely depends on the degree of iodine consumption by the population [5,13].

Indicators of the quality of children's health are a reflection of the pathogenic effects on the body of environmental, endemic and social risk factors. The problem is aggravated by irrational nutrition in most families, insufficient prevention of diseases associated with a deficiency of essential trace elements, including iodine [8,12].

Ultrasound examination can provide clinically useful information about changes in the size of the thyroid gland and glandular parenchyma [7]. Thyroid diseases with altered thyroid size are common among children, and cases have been identified that lead to many different forms of disability [11,14].

The purpose of the study: to study the ultrasound anatomy of the thyroid gland in boys and girls aged 10 years.

Material and methods: Healthy 10-year-old boys (n=35) and girls (n=29) from school No. 7 in Bukhara were selected for this research work. Ultrasound examination of children was carried out in the endocrinological dispensary of the Bukhara region. The results obtained by ultrasound were statistically analyzed.

Results and analyses:

In 10-year-old boys, the length of the right segment of the thyroid gland ranged from 2.9 to 3.7 cm, on average 3.4±0.023 cm, width from 1.3 to 1.6 cm, on average 1.5±0.009 cm, thickness from 1.6 to 2.3 cm, on average 1.8±0.020 cm. The size of the thyroid fragment in 10–year-old boys ranges from 2.9 to 6.5 cm3, on average 4.1 ± 0.11 cm3. In 10-year-old boys, the length of the left segment of the thyroid gland ranges from 2.8 to 3.5 cm, on average - 3.3 ± 0.020 cm. At this age, the left spot had a width of 1.2 to 1.7 cm and averaged 1.4 ± 0.015 cm, and a thickness of 1.5 to 2.2 cm with an average value of 1.7 ± 0.020 cm. The size of the left segment of the thyroid gland is from 2.4 to 6.3 cm, on average – 3.8 ± 0.11 cm3, the height of the glandular neck is from 0.32 to 0.50 cm, on average - 0.42 ± 0.004 cm.

In 10–year–old girls, the size of the thyroid gland is from 2.9 to 4.1 cm, on average 3.9± 0.044 cm, the width of the gland is from 1.4 to 2.0 cm, on average 1.8± 0.017 cm, the thickness is from 1.6 to 2.6 cm, on average 2.3± 0.029 cm. The size of the right segment of the thyroid gland in girls of this age ranges from 3.1 to 10.2 cm3, on average – 7.8 ± 0.21 cm3. In 10–year-old girls, the length of the left ventricle of the thyroid gland is from 2.8 to 4.0 cm, on average 3.7±0.035 cm, the width of the left ventricle is from 1.3 to 2.1 cm, on

average 1.7± 0.023 cm, and the thickness is from 1.6 to 2.7 cm, on average the average is 2.2±0.032 cm. The size of the left segment of the thyroid gland ranges from 2.8 to 10.9 cm3, the average is 6.6 ± 0.23 cm3, the height of the glandular neck is from 0.38 to 0.75 cm, and the average value is 0.60± 0.013 cm.

CONCLUSIONS:

1. As the child grew older, the ultrasound dimensions of the thyroid gland also increased with age.
2. In girls these indicators were significantly higher than in boys.
3. These changes are associated with puberty in girls.

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