

**I.N.Gorianikova**

Kharkiv National  
Medical University

**Key words:**

thymus,  
microcirculatory  
blood vessels, stroma,  
morphology, children,  
lifestyle mother.

*Received: 29.08.2015*

*Accepted: 12.09.2015*

UDC [616.438:616.13/.14-018.2-091.8]-053.18-053.36-02-055.26:613.8

**MORPHOLOGICAL FEATURES OF  
STROMAL-VASCULAR COMPONENT OF  
THE THYMUS OF STILLBORN CHILDREN  
AND CHILDREN UNDER ONE YEAR OF  
LIFE FROM MOTHERS THAT DO NOT  
FOLLOW A HEALTHY LIFESTYLE**

**ABSTRACT. Background.** Morphofunctional state of the thymus of child in most cases is directly dependent on the mother health and her lifestyle. **Objective.** The purpose of the research was to reveal the morphological features of stromal-vascular component of the thymus of stillborn children and children under one year of life born from women who conducted a sedentary lifestyle, smoked, drank alcohol and ate the foods containing tartrazine. **Methods.** The material of the study was 67 thymuses of stillborn children and children under one year of life born from mothers who conducted a sedentary lifestyle, smoked, drank alcohol and ate the foods containing tartrazine. **Results.** It was found that the above mentioned components of mother lifestyle are damaging factors for thymus of their children that lead to structural changes in the walls of microcirculatory blood vessels, circulatory disorders, sclerotic and atrophic changes in the organ. Structural changes in the vascular endothelium (swelling, desquamation), wall of the vessel (focal thickening of the basement membrane, thickening of the vessel wall), sclerotic and atrophic processes in the thymus increased with increasing age of the child. The severity of the circulatory disorders (vascular hyperemia, hemorrhage, edema, thrombus formation) decreased with increasing age of the child. **Conclusion.** An important step to prevent the structural changes in children from mothers with unhealthy lifestyles is pregravid preparation including conscious following the rules of healthy lifestyle, formation the moral responsibility and willingness to pregnancy.

© I.N.Gorianikova, 2015

**Citation:**

Gorianikova IN. [Morphological features of stromal-vascular component of the thymus of stillborn children and children under one year of life from mothers that do not follow a healthy lifestyle]. Morphologia. 2015;9(3):12-7. Russian.

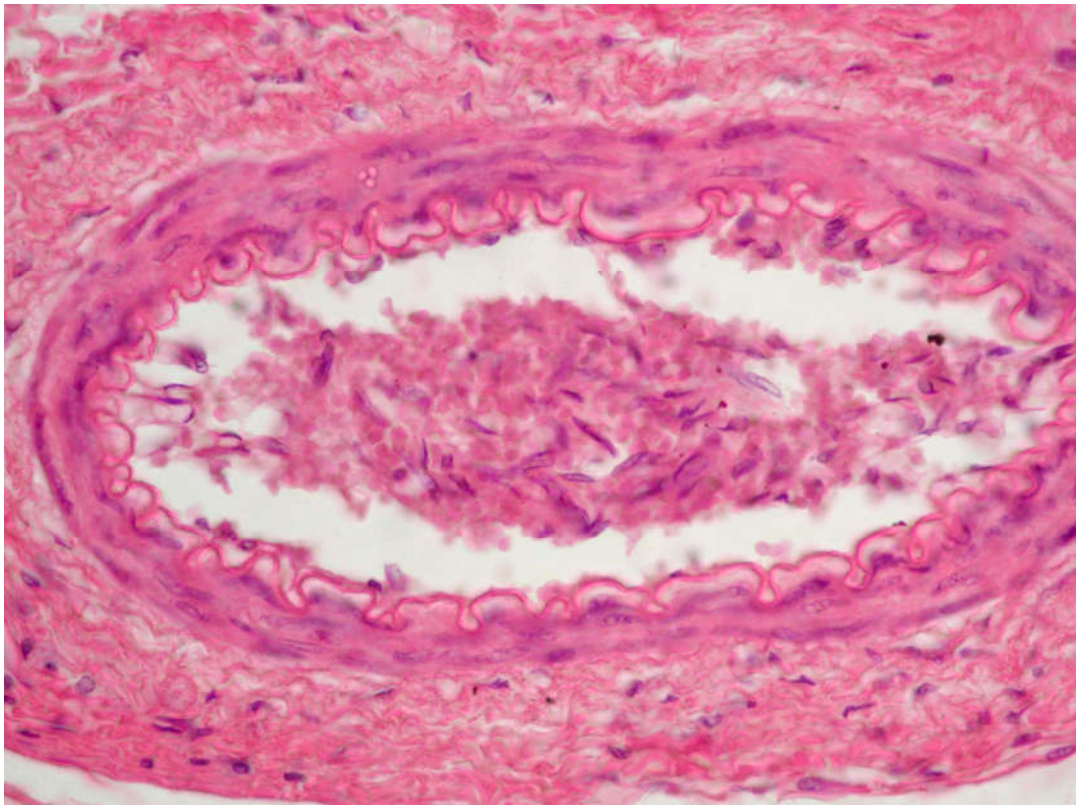


Fig. 1. Group III. Desquamation of endothelial cells. Endothelial cells are seen in the arteriole lumen. Internal elastic membrane of the vessel has a corrugated aspect. Periarteriolar sclerosis. Hematoxylin&Eosin staining.  $\times 400$ .

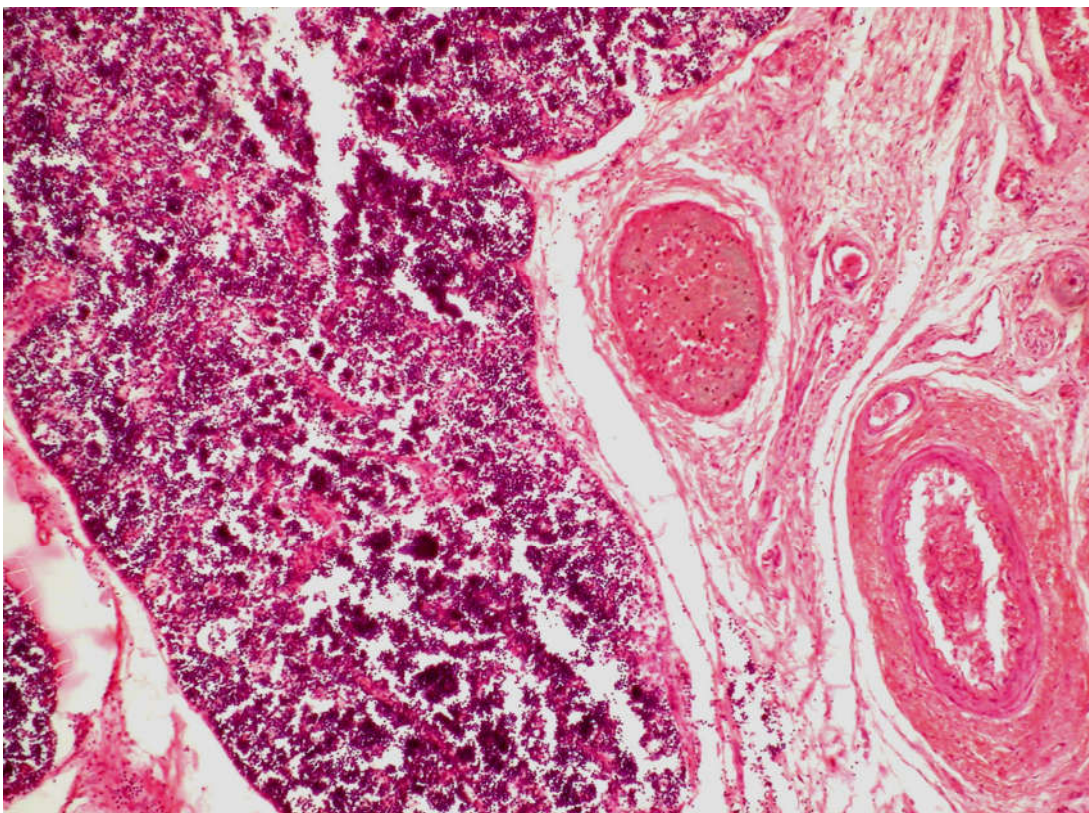


Fig. 2. Microcirculatory bed vessels in enlarged connective tissue septa, with irregularly thickened vascular walls in result of sclerosis, with perivascular sclerosis. Plethora of all types of the vessels. Hematoxylin&Eosin staining.  $\times 200$ .

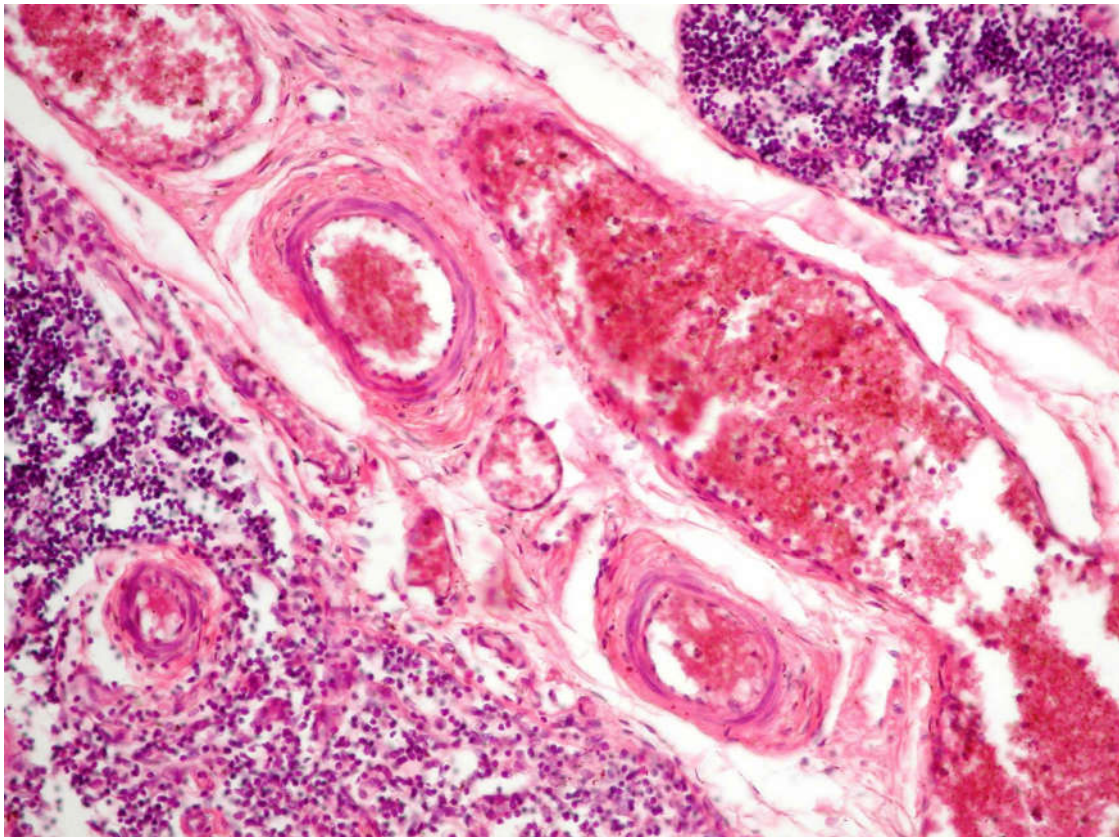


Fig. 3. Irregular thickening of arteriole wall with perivascular sclerosis, thrombus is seen in the venular lumen. Hematoxylin&Eosin staining.  $\times 100$ .

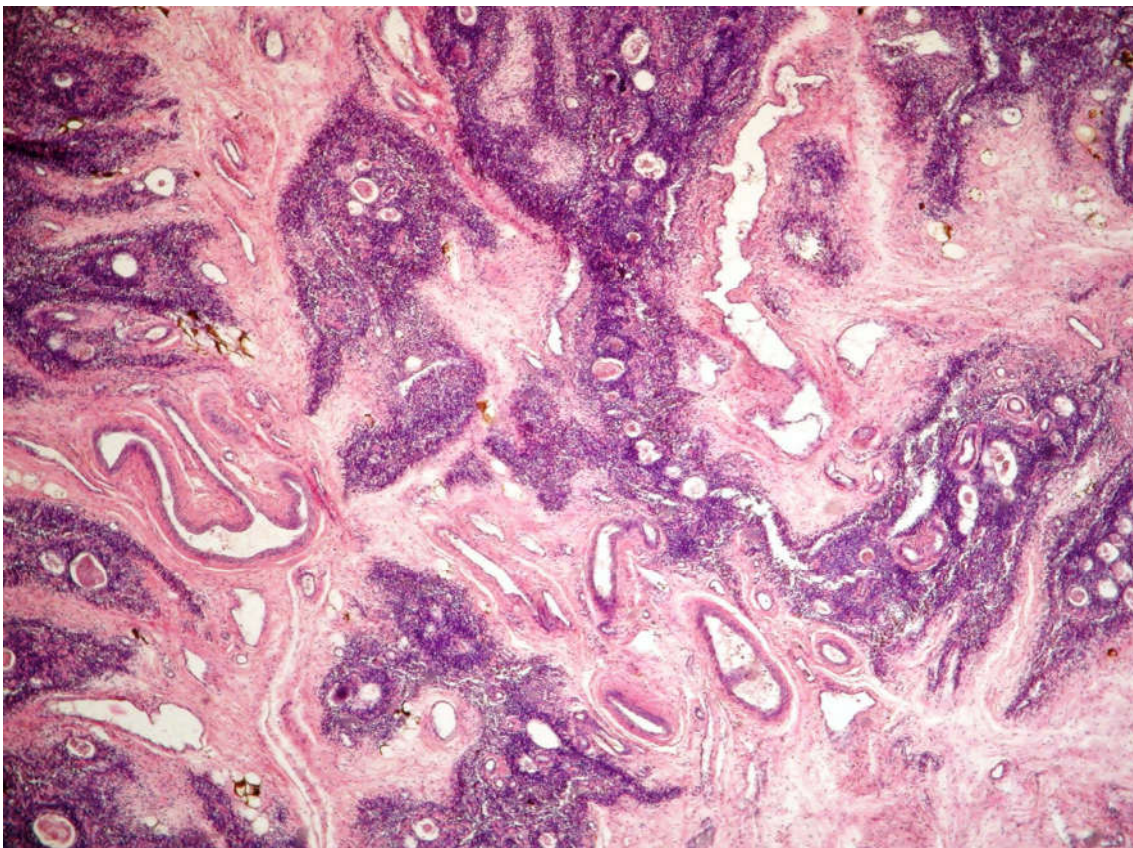


Fig. 4. Group III. Marked sclerotic changes in thymus tissue. Hematoxylin&Eosin staining.  $\times 40$ .

## *References:*

1. Smiyan OI, Plahuta VA, Vasileva OG, Yemets OM. [The main particularities of thymus in child in normal condition and pathology]. *J Clin Exp Med Res*. 2015;3(1):153-62. Ukrainian.
2. Loginova NP, Chertvetnykh VA, Khromtsova GA. [Morphological and immunohistochemical features of the thymus structure in neonatal infants with congenital heart diseases]. *Arkh Patol*. 2013 Jul-Aug;75(4):9-14. Russian. PMID: 24313185.
3. Sirotina OB [Ultrasound examination of the thymus in children in normal conditions, in certain diseases and conditions]. *International journal of endocrinology*. 2012;1:76-86. Ukrainian.
4. Hruzyntseva NA, Seniv OY. [Perinatal monitoring and analysis of early neonatal period of the newborns with congenital malformations and high risk of hereditary disease]. *Tavrisheskiy medikobiologicheskiy vestnik*. 2012;15(2, Pt 1): 90-2. Ukrainian.
5. Volkova LV, Omelchuk NN [Laboratory, histological and immunohistochemical criteria for diagnosis of immune deficiency in the practice of pathology]. *International journal of applied and fundamental research*. 2014;(8-1):133. Russian.
6. Starskaya IS, Polevshchikov AV. [Morphological aspects of atrophy of the thymus under stress]. *Immunologiya*. 2013;34(5):271-7. Russian.
7. Bulaeva NI, Golukhova EZ. [Endothelial dysfunction and oxidative stress: the role in cardiovascular pathology]. *Creative cardiology*. 2013;1:14-22. Russian.
8. Veile A, Winking J, Gurven M, Greaves RD, Kramer KL. Infant growth and the thymus: data from two South American native societies. *Am J Hum Biol*. 2012 Nov-Dec;24(6):768-75. doi: 10.1002/ajhb.22314. PMID: 22915311.
9. Moore SE, Fulford AJ, Wagatsuma Y, Persson LÅ, Arifeen SE, Prentice M Thymus development and infant and child mortality in rural Bangladesh. *Int J Epidemiol*. 2014 Feb;43(1):216-23. doi: 10.1093/ije/dyt232. PMID: 24366492; PMCID: PMC3937977.