Chapter 11 Summary: Physical complications: auto-immune disease

Autoimmune disorders occur when the body's immune system mistakenly attacks and destroys healthy tissue. Over 80 disorders have been identified, and five to eight per cent of Americans are affected by them.[1] Autoimmune disorders are the third most common disease after heart disease and cancer, and their prevalence is increasing.[2]

Research into the causes of autoimmune disorders is ongoing. One mechanism that has been proposed is fetal microchimerism, which occurs when fetal immune cells transfer across the placenta into the mother's bloodstream and, with a great capacity for dividing and maturing, circulate and reside in her tissues.[3]Although some transfer of fetal immune cells is normal, a woman's immune system may attack the healthy tissue where the cells have resided in a graft vs. host response, like that which takes place when a donated organ is rejected by the recipient. Fetal microchimerism is therefore a plausible explanation of the large diversity of tissue pathology and the yearly increase in autoimmune diseases in women.[4]

Induced abortion may be associated with autoimmune disorders through its effect on fetal microchimerism.It has been found that "women with previous induced abortion are eight times more likely to have microchimerism than other healthy women."[5]Within one hour after termination of pregnancy, there isa significant fetal-maternal transfusion of cells, which may be due to the destruction of the placenta.[6]Thus, "the consistently rising incidence of autoimmune diseases in women over the past four decades may be attributed to the increase in the utilization of abortion."[7]

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[1]Progress in Autoimmune Diseases Research, Report to Congress, National Institutes of Health, The Autoimmune Diseases Coordinating Committee, March 2005. http://www.niaid.nih.gov/topics/autoimmune/documents/adccfinal.pdf.

[2]Fairweather D. Autoimmune Disease: Mechanisms. Encyclopedia of Life Sciences.John Wiley & Sons, Ltd., 2007, pp.1-7. Online edition: www.els.net.

[3]Ando T, Davies TF. Postpartum Autoimmune Thyroid Disease: The Potential Role of Fetal Microchimerism. The Journal of Clinical Endocrinology & Metabolism 2003; 88(7):pp. 2965-71.

[4]Miech RP. The role of fetal microchimerism in autoimmune disease. International Journal of Clinical and Experimental Medicine 2010; 3(2): pp. 162-8.

[5] Yan Z, Lambert NC, Guthrie KA et al. Male microchimerism in women without sons: quantitative assessment and correlation with pregnancy history. American Journal of Medicine 2005; 118(8):pp. 899-906.

[6]Bianchi DW, Farina A, Weber W, et al. Significant fetal-maternal hemorrhage after termination of pregnancy: implications for development of fetal cell microchimerism. AJOG 2001; 184(4): 703-6, p.705; Miech RP, p. 162.

[7]Miech RP, p. 162.