Unique Identifier
9789259
Medline Identifier
99005688
Record Owner
NLM
Authors
Razon MJ. Kraling BM. Mulliken JB. Bischoff J.
Institution
Surgical Research Laboratory, Children's Hospital, Boston, MA 02115, USA.
Title
Increased apoptosis coincides with onset of involution in infantile hemangioma.
Source
Microcirculation. 5(2-3):189-95, 1998.
Abbreviated Source
Microcirculation. 5(2-3):189-95, 1998.
NLM Journal Code
cg2, 9434935
Journal Subset
IM
Country of Publication
United States
MeSH Subject Headings
Age Factors
*Apoptosis
Case-Control Studies
Cell Division
Child, Preschool
Endothelium, Vascular / gd [Growth & Development]
Endothelium, Vascular / pa [Pathology]
*Hemangioma / pa [Pathology]
Human
Infant

Infant, Newborn
Male
Neoplasm Regression, Spontaneous / pa [Pathology]
Neovascularization, Pathologic
Skin / cy [Cytology]
*Skin Neoplasms / pa [Pathology]
Support, U.S. Gov't, P.H.S.

Abstract

OBJECTIVE: Hemangioma is an endothelial cell tumor that grows rapidly during infancy and regresses slowly during childhood. However, little is known about the natural history of this common tumor. To gain insight into the cellular mechanisms that underlie the switch from uncontrolled growth to involution of endothelium, we investigated the extent of cellular apoptosis versus proliferation in hemangioma specimens that spanned the natural life cycle of the tumor. **METHODS:** We analyzed apoptosis and cellular proliferation in frozen sections from 16 hemangioma specimens using the TUNEL assay to detect apoptotic cells and the Ki67 antigen to detect dividing cells. **RESULTS:** Apoptosis was low in proliferative phase hemangiomas but increased fivefold in involutive phase specimens obtained from children one to four years of age. Immunofluorescence double-labeling experiments showed that at least one third of the apoptotic cells were endothelial. As expected, cellular proliferation was high in specimens up to 2 years of age but decreased significantly thereafter. Apoptosis was consistently low in nine normal skin tissues (newborn to 4 years of age) obtained from discarded pathology specimens. **CONCLUSIONS:** These results suggest that increased apoptosis during the second year of life can offset cellular proliferation and may be involved in initiating regression of hemangioma.

ISSN

1073-9688

Publication Type

Journal Article.

Grant Number
P01 CA 45548 (NCI), R29 GM46757 (NIGMS)
Language
English
Entry Date
19990125
Revision Date
20001218
Update Date
20021127
