

## Excerpt from "Microchip-Induced Tumors in Laboratory Rodents and Dogs: A Review of the Literature 1990–2006"

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### Vascellari, Melchiotti, & Mutinelli, 2006

Fibrosarcoma with typical features of postinjection sarcoma at site of microchip implant in a dog: Histologic and immunohistochemical study. *Veterinary Pathology*. 2006;43:545—548.

Author(s)	Animal Involved	Chip Exposure Time	Cancer Developed
Vascellari, et al., 2006	9-year-old French bulldog	7 months	Fibrosarcoma



*"Reports on adverse reactions to vaccination and microchips are strongly encouraged to deepen the current knowledge on their possible role in tumorigenesis . . . the cause and effect relationship between exposure (injection) and outcome (sarcoma) is still to be defined and is a matter of discussion for experts."* (p. 547)

#### Summary

A 9-year-old bulldog developed a cancerous tumor (fibrosarcoma) adjacent to a microchip implant approximately seven months after being implanted with the device. Researchers attributed the tumor to either the microchip or to vaccinations at the site, and called for better reporting of adverse reactions to microchip implants and vaccinations.

#### Overview

In September 2003, Leon, a 9-year-old male French bulldog was implanted with a microchip for identification purposes. In April 2004 (8 months later) Leon's owner detected a lump measuring 3 cm x 3 cm (1.2 x 1.2 inches) in the implant area. The mass was surgically removed and subjected to laboratory analysis whereby it was identified as a high-grade infiltrative fibrosarcoma—a malignant and fast-growing form of cancer. It was found attached to the microchip. Leon later died from complications that his owner attributes to the cancer.

The microchip is implanted into dogs through an injection procedure involving a 12-gauge needle. The researchers suggest the tumor may be a form of post-injection sarcoma, involving an inflammatory reaction around an injection site that predisposes the tissues to tumor development. The researchers note that "irritation, inflammation, and/or wounds [promote] tumor development. Virtually anything that causes a local inflammatory reaction may potentially be responsible for neoplastic initiation [i.e., abnormal proliferation of cells]." (p. 546)

The authors attributed the cancer to either the microchip or to vaccinations the dog had received at

the same site. They wrote: "It is difficult to establish which was the primary cause of the neoplastic growth, because the dog had received several rabies vaccines and the microchip was detected close to but not included in the mass." (p. 547)

The investigators conclude by stating that "reports on adverse reactions to vaccination and microchips are strongly encouraged to deepen the current knowledge on their possible role in tumorigenesis [causing tumors]," calling it "a matter of discussion for experts." (p. 547)

It should be noted that a complete physical exam found nothing other than the detected lump to indicate that Leon had developed cancer. No evidence of inflammation or sepsis were found at the site of the implant. Had Leon's owner not insisted on a microscopic evaluation of the unusual growth, his cancer might never have been detected.

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## Study Details

- The evaluation was conducted by Dr. Marta Vascellari of the Istituto Zooprofilattico Sperimentale delle Venezie at Viale dell'Universita in Legnaro, Italy, with associates Erica Melchiotti and Franco Mutinelli.
- The microchip was manufactured by Digital Angel,<sup>1</sup> the parent company of the VeriChip Corporation. It was distributed by Merial<sup>2</sup> under the Indexel® brand, through Lyon, France.

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1 Digital Angel's website states: "Digital Angel manufactures implantable RFID chips used in pets around the world.... In Europe, our product is distributed by Merial in some countries under the Indexel® brand. For more information, visit [merial.com](http://www.digitalangelcorp.com/dac_pets.asp)." Source: [http://www.digitalangelcorp.com/dac\\_pets.asp](http://www.digitalangelcorp.com/dac_pets.asp). Accessed July 23, 2007.

2 Merial's website states: "Merial is a world-leading animal health company. We are a forward-looking company with a proven track record, producing pharmaceutical products and vaccines for livestock, pets and wildlife." Source: [http://www.merial.com/our\\_company/index.asp](http://www.merial.com/our_company/index.asp). Accessed July 23, 2007.