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needles meeting certain criteria: very fine, flexible, well-polished, and, most of all, not breakable. In the past, non-metallic substances such as bamboo have also been used for needles. Felix Mann, in his recent book on acupuncture,⁵ states that silver alloys have the advantage of having some self-sterilizing properties but that for very thin needles they are too soft, and stainless steel must be used. However, Manaka⁶ states that some ancient Chinese masters attribute particular qualities to the color of the metal: Yellow (gold) is used for "stimulating or tonifying depleted energy," white (silver) for "depressing excess energy." He also refers to some recent investigations by Western researchers where the impedance at various electric terminal points is affected by the type of metal used to make the needle. Other authors relate the choice of metal to the Chinese principles of Yin and Yang, feminine and masculine forces in nature: Gold, the metal of Yang, should be used for diseases of Yin, and silver for diseases of Yang. But with the general acceptance of the principles of asepsis it was found that stainless steel needles were the most practical because they could be most easily sterilized.⁷

Summary

Subcutaneous linear metallic densities were seen in x-ray films of the back of a 44-year-old Korean woman. Acupuncture needles had been permanently placed in that position six years before as treatment for acute back pain. These gold needles bring to our attention two facts. First, acupuncture needles may be found in subcutaneous tissue either as a result of their intentional placement there or because of accidental breakage. Second, the material of which the needles is made is felt by some therapists to have special significance.

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REFERENCES

1. Serizawa K: *Shinkyu Kagaku* [The Science of Acupuncture]. Vol. 2 (in Japanese). Tokyo, Ishiyaku Shuppan Co., Ltd., 1965, p 238
2. Veith I: Acupuncture therapy—past and present—Verity or delusion. *JAMA* 180:478-484, 1962
3. Chu L: Hsin Chên Chiu Hsiéh [New Acupuncture Study] (in Chinese). Tokyo, Jen Min Wei Sheng Publishing Co., 1955, p 63
4. Moss L: *Acupuncture and You*. 1st American Ed. New York, Citadel Press, 1964, p 39
5. Mann F: *Acupuncture—The Ancient Chinese Art of Healing*, 2nd Ed. London, Heinemann Medical, 1971, pp 191-194
6. Manaku Y, Urquhart IA: *The Layman's Guide to Acupuncture*. New York, Weatherhill, 1972
7. Veith I: Personal communication, 1973

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Tick-Bite in Oregon: Paralysis in California

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TICK-BITE PARALYSIS is well-known in the United States and Canada, and case reports are too numerous to permit reference to all. However, despite the abundance of *Dermacentor andersoni* and *Dermacentor variabilis* ticks (the most common carriers of the disease) and reports of cases in deer, cattle, horses and other animals associated with *Dermacentor occidentalis* in California,¹⁻³ no reports of human cases acquired in California have been published, so far as we are aware. There is only one previous report of a case in California with out-of-state acquisition—that of a three-year-old girl with tick-bite in Oregon, diagnosed in Oakland, California, in June, 1960.⁴ We wish to record a second case, that of a three-and-a-half-year-old girl who was bitten by a tick in La Grande, Oregon (a well-known endemic area for tick-bite paralysis), but who became ill in Contra Costa County, California.

The patient is an otherwise healthy child with normal growth and development and no significant antecedent illnesses. On the evening of June 26, 1972, she was noted to have some difficulty getting out of the car just after arriving home from a trip to Oregon. The following morning she had great difficulty in standing, sitting or walking. When seen by one of us (F.M.B.), she was alert, cooperative, and afebrile. Results of physical examination were normal except for weakness and

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ataxia. The neck was supple and general muscle tone was normal; there was no nystagmus and cranial nerve function was unimpaired. The deep tendon reflexes were not obtainable. Plantar reflexes were flexor. On sensory examination (light touch and pin prick) no deficiencies were noted. The patient was admitted to hospital for more thorough examination. A partially engorged female *D. andersoni* tick was then discovered attached in the hair line of the occipital region and was removed. The patient showed rapid improvement thereafter, and it was not felt necessary to perform a spinal tap or other diagnostic tests. She was discharged essentially asymptomatic the following day.

Discussion

Tick-bite paralysis often presents a diagnostic puzzle and may be rapidly fatal if not recognized in time. A tick usually must be attached for four to six days before symptoms appear. Characteristically, there is an ascending symmetrical paralysis without antecedent symptoms; there are no paresthesias or other sensory changes and no fever; the cerebrospinal fluid is normal, the electromyogram shows decreased conduction velocity and decreased muscle action potential amplitude, and an engorging tick is found, often hidden in the hair. Symptoms usually recede rapidly upon removal of the tick, but respiratory paralysis may occur and the toxic effects can be irreversible if too great a delay has occurred. These features together allow differentiation from Guillain-Barre syndrome, Eaton-Lambert disease, myasthenia gravis, poliomyelitis, botulism, diphtheritic polyneuropathy or other causes of paralysis. Several recent reviews or case reports have detailed recent knowledge of the disease.⁵⁻⁸

Physicians in California should consider this

disease in the differential diagnosis of paralytic illness, and should take a careful history of recent travel and possible tick exposure. The patient should be examined thoroughly for attached ticks, particularly in the scalp. If a tick is found, examination of the entire body should be completed, for there may be other ticks attached. Ticks should be removed by gentle traction with forceps, with care taken not to tear the body from the head. The tick should be kept alive and sent to an expert for species identification. The patient should be observed for a week or two. Acute and convalescent-phase blood specimens should be saved, since further research is needed on tick-bite paralysis and since other diseases such as Colorado tick fever, Rocky Mountain spotted fever and tularemia could subsequently result from the tick bite, and specific serologic tests would be needed for diagnosis.

Summary

A case of tick paralysis in a three-and-a-half-year-old child in California who acquired the tick bite in Oregon is reported. This is only the second such case on record. In California, the disease-producing ticks have been found affecting domestic and wild animals, and could also affect man.

REFERENCES

1. Brunetti O: Tick paralysis in California deer. *Calif Fish and Game* 51 (3):208-210, 1965
2. Loomis EC, Bushnell RB: Tick paralysis in California livestock. *Am J Vet Res* 29:1089-1093, 1968
3. Gregson JD: Tick Paralysis—An Appraisal of Natural and Experimental Data. *Can Dept Agric Monog No. 9*, 1973
4. Donovan WB, Feldman D: Tick paralysis. *Marquette Med Rev* 26:8-10, 1960
5. Schmitt N, Bowmer EJ, Gregson JD: Tick paralysis in British Columbia. *Can Med Assoc J* 100:417-421, 1969
6. Lagos JC, Thies RE: Tick paralysis without muscle weakness. *Arch Neurol* 21:471-474, 1969
7. McLennan H, Oikawa I: Changes in function of the neuromuscular junction occurring in tick paralysis. *Can J Physiol Pharmacol* 50:53-58, 1972
8. Haller JS, Fabara JA: Tick paralysis—Case report with emphasis on neurological toxicity. *Am J Dis Child* 124:915-917, 1972