Germ-Line Mutations of the p53 Tumor-Suppressor Gene in Children and Young Adults with Second Malignant Neoplasms

To the Editor: In our article on germ-line mutations of the p53 tumor-suppressor gene in children and young adults with second malignant neoplasms (May 14, 1992, issue),1 we reported that the proband (II-1) and her mother (1-2) in Family 6 carried germ-line point mutations in the p53 gene that resulted in an amino acid change from arginine to tryptophan at codon 248 (Fig. 1 and 3). The proband’s father and sister were reported to carry wild-type p53. As part of a clinical program of genetic testing, a second p53 analysis was performed on a new blood specimen from the proband, and no mutations were found. Remnants of the proband’s original DNA sample and new samples from other unaffected family members also showed normal p53 genes. No DNA remained from the deceased mother. We have reexamined samples from the other three families (Families 15, 38, and 49) and have found the mutations to be as we described in our paper. Although we have not been able to confirm the cause of the error with regard to Family 6, possible explanations include a mix-up of the specimens or contamination with polymerase-chain-reaction products containing mutations at codon 248. This experience calls attention to the possibility of false positive results in genetic testing, which can be harmful if they are used in decisions affecting clinical management.

The occurrence of germ-line p53 mutations in the other families, as well as in subsequent reports in the literature, indicates that the scientific message of the original work—that germ-line p53 mutations can be found in young patients affected with multiple neoplasms—remains intact.

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Treatment of Head Lice

To the Editor: Driscoll and Tronic (Images in Clinical Medicine, Sept. 12 issue)1 reported on the examination of hair from two young girls infested with Pediculus humanus capitis. Panel B reportedly shows a female head louse. In point of fact, however, male genitalia are plainly visible. Panel A is described as showing an unhatched egg, or nit, on the hair shaft. It seems to us that the nit’s operculum is absent, which usually means that the egg has been hatched. The dark area within the shell may represent crumpled traces of the vitelline membrane, which hinders the opening of the operculum and the larva leaves the shell. The nit, as shown, is not viable and is not in itself a cause of concern as a possible source of reinfestation. It should also be noted that even a nit with an intact operculum will not necessarily produce a larva: 2 to 12 percent of louse eggs are not hatched.2

Practically speaking, any nit more than 6.35 mm from the scalp is not prone to produce a larva and, hence, is of no clinical significance. The egg is laid very close to the scalp (at a distance of 1 mm), firmly attached to the hair, and the larva emerges from the nit 7 to 10 days later.3 The hair grows at a rate of 0.40 mm per day. Therefore, if a nit is situated 3.80 cm from the scalp, it means that the young louse emerged from the egg three months earlier and that it died from natural causes (in the absence of treatment nearly two months earlier).4 The children described by Driscoll and Tronic were said to be free of lice after four months and several treatments. Such a long period of treatment could have resulted from a misdiagnosis of continuous reinfestation based solely on the observation of some nits on the children’s hair. The prolonged period of treatment could also have resulted from the resistance of the lice to insecticides.5

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To the Editor: Driscoll and Tronic imply that a diagnosis of head lice is rare. Sad to say, pediculosis is a prevalent and persistent condition in school-age children. The National Pediculosis Association estimates that 12 million children are infected with head lice annually.1 Most mothers could have made this diagnosis in two seconds, without the help of a light microscope and magnification. At the
school my children attend, the 276 students are checked for head lice twice a year. At every check, 5 to 10 percent of the students are found to have pediculosis.

More troubling, however, is the authors' failure to state that all nits must be manually removed to ensure effective treatment. No pediculicide is 100 percent ovicidal, and lice are becoming resistant to treatment. Manual removal of all nits is critical to prevent reinfestation and transmission to others. It is possible that the two children described by the authors could have been spared four months of repeated treatment with pesticides if the proper advice — thorough, daily head checks and removal of all nits — had been given.

With the exception of the common cold, pediculosis capitis affects more school-age children than all other communicable childhood diseases combined. Drug manufacturers are doing a booming business in sales of pediculicides and related products. Parents are desperate for safe, accurate, consistent advice on how to treat affected children. Physicians often give conflicting and sometimes dangerous information. Some recommend 30 days of treatment with antibiotics, and others recommend prolonged treatment with pesticides. Parents can still easily obtain a prescription for Kwell, despite the April 1996 Food and Drug Administration (FDA) advisory about lice treatments containing lindane. The Lice-Buster Book, written by a nonphysician, urges parents to write their friends overseas in order to obtain products containing pesticides that are banned in the United States and recommends that parents "allow the pediculicide to remain on the head for longer than the prescribed time." Physicians rely on medical publications to provide accurate, detailed data, and parents rely on their physicians. Unfortunately, most physicians consider head lice unworthy of serious attention. The critical importance of complete nit removal is rarely stressed. Some health maintenance organizations even contend that this step is unnecessary. Physicians lack knowledge about how to treat pediculosis and are deplorably ignorant about the effectiveness and dangers of treatment with pesticides, particularly repeated treatment.

Pediculosis is a highly communicable condition affecting the health of our most vulnerable population, our children. You do your readers and their young patients a great disservice by printing incomplete and outdated information. Physicians, in general, do their patients a great disservice by not viewing pediculosis and its treatment with the appropriate gravity.

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To the Editor: In Israel, infestation with lice is common in small children, probably because lice are transmitted from one child to another in day-care centers, nurseries, and kindergartens. In these settings, children have very close contact with one another. Parents here accept head lice as a fact of life, albeit an unpleasant one, and children with the condition are not stigmatized.

Although many commercial preparations to eliminate lice and their eggs are available and considered safe, their long-term effects are still unknown. Also, because these preparations are often not 100 percent effective, infestations recur. I have found that the most effective treatment is the daily combing of wet hair with a fine metal comb. Adult lice are easily removed within a day or two, depending on one's technique. As the eggs hatch, daily combing removes the immature lice before they reach reproductive age. Within one to two weeks, the child's head is completely free of lice. Although this method is labor-intensive, it is the only one I have found to be 100 percent effective and nontoxic.

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Dr. Driscoll replies:

To the Editor: I commend Nguyen and Robert for their astute observation that a male head louse is shown in Panel B. Nguyen and Robert further suggest that the image in Panel A is not an unhatched nit but an empty egg. The operculum is absent. The loss of the operculum may be due to a failed attempt at hatching or mechanical damage. The nit contains a complete nymphal louse, albeit dead (Pollack RJ, Harvard School of Public Health, Boston: personal communication). Nguyen and Robert, as well as Parker, question the prolonged course of treatment. In spite of multiple treatments with FDA-approved pediculicides, viable louse persisted for four months. This raised the question of reinfection or resistance. The available data are insufficient to determine whether head lice are truly resistant to the recommended drugs.1

I agree with Parker and Garfinkel that vigilance and persistence, with frequent hair combing to remove unhatched nits, are important. An egg remover can ease the task of nit removal, and a pediculicide may reduce the overall parasite burden. It can be argued that the safest, quickest, and most cost-effective method of nit removal is shaving the head. However, this practice would be socially unacceptable in many communities.

I hope that these images will motivate the readers of the Journal to recognize pediculosis capitis and seek safe and effective methods of treatment.

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