

Hewlett-Packard 7802C defibrillator, with anterior and posterior position of the paddle electrodes. Transthoracic resistance was measured by techniques previously reported.⁴ Half these patients (13 of 26) were cardioverted with this initial shock. The transthoracic resistance was significantly lower in the group that was cardioverted (50 ± 12 vs. 59 ± 10 ; $P < 0.05$).

My conclusion is that paddle-electrode position and transthoracic resistance are among the factors that determine the success or failure of cardioversion of atrial fibrillation with the initial direct-current shock. Whether these factors are clinically important is another question. The study by Kerber and his associates suggests that these factors may not be important when higher energies (e.g., 100 J delivered) are used.

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The above letter was referred to the authors of the article in question, who offer the following reply:

To the Editor: We appreciate Dr. Ewy's interest in our paper. It is important to realize, as Ewy points out, that older defibrillators often delivered substantially less energy than their nominal dial settings indicated. Attempts at defibrillation or cardioversion with such older instruments in the past may at times have been unsuccessful because less energy was actually being delivered than the operator believed. This problem has been largely overcome in contemporary instruments, some of which actually have digital displays of the delivered energy available at the moment of discharge.

It is possible, as Ewy suggests, that electrode position and transthoracic resistance may assume more importance in cardioversion if very low energies are used. However, shocks of less than 100 J for the cardioversion of atrial fibrillation are often unsuccessful. Moreover, in our study we did not find evidence of myocardial damage from shocks at energy levels of 100 to 300 J. Thus, there appears little clinical reason, as Ewy implies, to use very-low-energy shocks in the cardioversion of patients with atrial fibrillation.

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PREVALENCE OF HEPATITIS B AMONG MEN ADMITTED TO A FEDERAL PRISON

To the Editor: The prevalence of the carrier state for hepatitis B among residents of penal institutions has been noted in previous *Journal* articles to be markedly elevated over that in the general population, ranging from 1.5 per cent to 2.1 per cent in the former group, as compared with 0.08 per cent in the latter.¹⁻⁴ These studies demonstrated the unsuitability of prisoners for use in blood-donation drives, but little work on this population has appeared since then. Using the third-generation radioimmunoassay, we tested all 293 men newly admitted to a federal prison for hepatitis B surface antigen (HBsAg) over a one-year period. We found 12 positive carriers in this population, or a prevalence of 4.1 per cent. Members of the HBsAg-positive group were more likely to have been involved in violent offenses, but no correlation to race or drug offenses was found.

This apparent increase in prevalence may be explained by the more sensitive technique that we employed. Nonetheless, it is apparent that the risk of spread of hepatitis B is higher than expected in the prison setting.

This would indicate that further special precautions are needed to identify the HBsAg carrier and prevent the spread of hepatitis B. Such precautions include routine screening of inmates, medical-chart labeling of positive carriers, passive immunizations of persons with accidental needle-stick exposures, and aseptic dental procedures.

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CHOLINE CONTENT OF MOTHERS' MILK IN ECUADOR AND BOSTON

To the Editor: We have found that the free choline concentration of human milk varies during postnatal development and is sometimes markedly depressed in samples from women thought to be ingesting a choline-deficient diet.

Choline is a precursor in the biosyntheses of phospholipids¹ and of the neurotransmitter acetylcholine.^{2,3} In animals, ingestion of a diet deficient in choline results in hepatic, renal, growth, and memory disorders.⁴ Neonates must ingest choline-containing foods like milk in order to maintain blood choline concentrations at high levels⁵; these levels may be needed to supply adequate choline to rapidly growing tissues. For these reasons, we were interested in measuring the amounts of choline available to infants ingesting human milk.

Milk from Boston women was compared with milk from women living in two communities in highland Ecuador (Table 1). These Ecuadorean women live in villages approximately 100 km north of Quito. The incidence of intellectual impairment and short stature among their offspring is high, and the maize-based diet of many villagers appears to be low in choline content.

Milk from Boston women had the highest free choline levels three to five days post partum; mature milk (more than 30 days post partum) had choline concentrations of 100 to 350 nmol per milliliter. Lecithin and sphingomyelin also served as sources of choline. Mature milk from 21 Ecuadorean women had much lower free choline contents (4 to 84 nmol per milliliter). The remainder of the Ecuadorean women (34 subjects) had choline concentrations similar to

Table 1. Free Choline Content of Milk Samples Obtained from Ecuadorean and American Women.*

MILK CHOLINE μM	PERCENTAGE OF POPULATION WITHIN GIVEN RANGE	
	ECUADOR (N = 55)	UNITED STATES (N = 11)
0-100	40	0
100-200	27	27
200-300	27	18
>300	6	55

*Milk samples were collected by manual expression at midday, after feeding the infant. All donors had been lactating for more than 30 days. Samples were placed on ice and frozen as soon as possible. Free choline, lecithin, and sphingomyelin were determined with radioenzymatic assays.³

those seen in milk from Boston women. Lecithin and sphingomyelin content was the same in Ecuador and Boston.

No studies have determined the actual choline requirements of neonates, nor do we know whether lecithin and sphingomyelin can be digested by neonates to yield free choline. More information about the effects of maternal diet on the quality of breast milk is clearly needed. In view of the high incidence of abnormalities in intellectual development and growth in children from these villages in Ecuador, we believe that the low choline concentrations we found in milk may have important consequences for the neonate.

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MORE ON NIPPLE SHADOWS IN X-RAY FILMS

To the Editor: The problem of a nipple marker surrounding or superimposed on a pulmonary nodule, as described in the October 15 issue by Dr. Polnitsky and his co-workers,¹ is an uncommon but realistic dilemma faced by physicians, particularly diagnostic radiologists. Indeed, a similar case has been described in one of the leading textbooks on chest radiography.² Aside from the placing of nipple markers, descriptions of the radiographic image of a nipple have been written in attempts to distinguish between the nipple and a true intrapulmonary lesion.³ Another maneuver that I have found useful in distinguishing the two entities is illustrated below.

A 60-year-old man was undergoing staging for malignant melanoma of the scalp. He had a history of granulomatous disease and gynecomastia, as seen on previous chest radiographs. On June 4, 1975, the posterior-anterior radiographic examination showed a nodular density, which had not previously been present and was not seen on the lateral view, projecting through the right lower lung field and coinciding with the expected location of the right nipple. Small nipple markers were placed, and the radiograph was repeated; the right nipple marker was superimposed on this density (Fig.

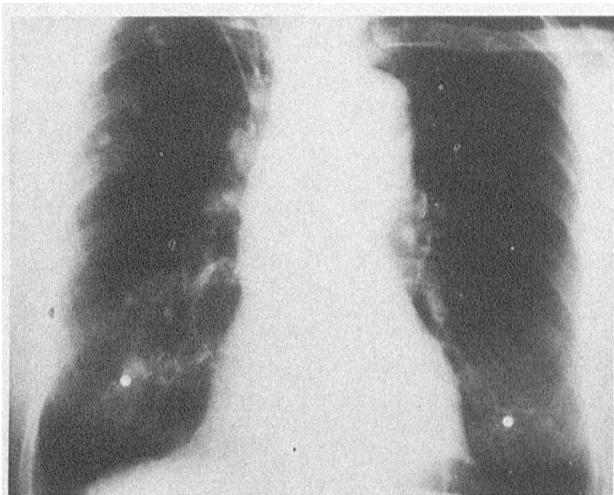


Figure 1. Chest Radiograph with Nipple Marker Projecting at Periphery of Lesion.

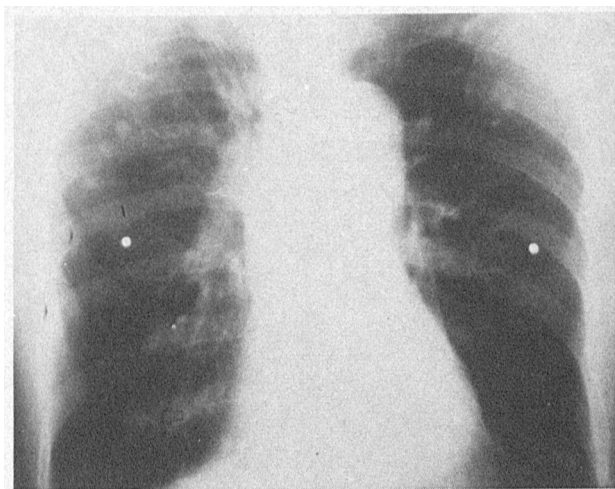


Figure 2. Repeat Radiograph with Arms Extended over Head, Showing Nipple Marker Clearly Separable from Lesion (Arrow).

1). A second radiograph was then obtained with the patient extending his arms high over his head (Fig. 2). The nipple markers were seen to migrate cephalad, with the density clearly separable as a true intraparenchymal nodule.

The same maneuver has been used in several other patients, with similarly successful results. Whenever a density does in fact represent a nipple, a standard nipple-marker film will superimpose the marker and the density, still leaving a degree of uncertainty in the mind of the physician. Instead of performing a repeat standard posterior-anterior radiographic examination with nipple markers in place, it might be more beneficial to obtain the nipple-marker film with the arms fully extended over the head. This would have an added advantage of thinning and elevating the breast tissue that lay over the lesion. This single view would be more helpful than ordering oblique views with nipple markers, as Polnitsky and his colleagues recommended.

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β -ADRENOCEPTOR ANTAGONISTS

To the Editor: In Dr. Frishman's excellent review of β -adrenergic blocking agents (August 27 issue),* he omitted one important factor in selection among the various drugs of this type: the cost. A patient receiving 240 mg of propranolol per day will incur costs of approximately \$250 per year. An equivalent dose of nadolol, 200 mg per day, will cost the patient approximately \$450 per year. Although cost should never be the overriding factor in decisions regarding therapy, I believe that when the distinction between various options is small, the cost differential, when appreciable, should be taken into account.

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*Frishman WH. β -Adrenoceptor antagonists: new drugs and new indications. *N Engl J Med.* 1981; 305:500-6.

To the Editor: Although the somatic effects of β -adrenergic blockade are of major interest, the psyche should not be neglected. Frishman, in his review of new indications for β -adrenoceptor an-