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(Accepted 14 August 1986)

## Hip fractures in healthy patients: operative delay versus prognosis

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### Abstract

One hundred and forty five women who had undergone hemiarthroplasty for a subcapital fracture of the femoral neck but who were otherwise fit were studied to determine whether undue delay between injury and operation influenced their social circumstances three months after surgery. The median delay for those patients who showed good rehabilitation at three months was 29 hours, but for those who showed poor rehabilitation it was 57 hours. This difference was significant.

It is suggested that a subcapital fracture in an otherwise fit elderly patient should therefore be regarded as a surgical emergency.

### Introduction

It is widely accepted that elderly women with hip fractures undergo surgery on the next available operating list, frequently 24 hours or

more after admission. We present a retrospective study relating this operative delay to the social circumstances of the patient three months after surgery.

### Patients, methods, and results

We studied 205 consecutive women patients, who had been admitted over 18 months and had undergone hemiarthroplasty for a displaced subcapital fracture of the femoral neck. Of the 205 patients, 60 had intercurrent illness that was likely to interfere with postoperative rehabilitation and were excluded from the study.

The social circumstances of each patient were assessed on admission and three months after surgery as (a) independent if she lived without help from others; (b) sheltered if she received substantial help with daily activities; or (c) resident in hospital if she lived in an institution.<sup>1</sup> The time delay between injury and operation and typical reasons for delay were also recorded. At the review three months after surgery each patient was placed in one of two groups based on her social circumstances at that time. Group A consisted of patients whose circumstances were similar to those on admission, and group B consisted of patients whose circumstances had deteriorated and those who had died.

Statistical analysis was by Student's *t* test. Results for operative delay produced a skewed distribution and log<sub>e</sub> (operative delay) was therefore used to correct the findings.

Of the 145 patients, 98 (68%) were admitted from an independent environment, 41 (28%) were sheltered, and 6 (4%) were resident in hospital. After three months similar percentages of each social category could be placed in group A (81% independent, 78% sheltered, and 83% resident in hospital). No patient improved after surgery; a patient stayed the same, became worse, or died.

Patients in group A had a median delay of 29 (range 6-184 h; mean 31.7 h) and group B patients a median delay of 57 (range 24-528 h; mean 74.7 h).

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The difference between the mean operative delays in the two groups was therefore 43 hours (95% confidence interval 41.35 to 44.45 h;  $t=6.0$ , 143 df;  $p<0.0001$ ). Despite a slight difference in the median ages for groups A and B (80 (range 47-96) and 82 (range 69-93), respectively) age distributions were similar. Typical reasons for delay included operator fatigue, delay in diagnosis, lack of theatre time, industrial action, and lack of patient's consent.

### Discussion

This retrospective study suggests that the longer an otherwise fit patient has to wait for her hip fracture to be treated the less she will progress after discharge, regardless of her social circumstances. Many hospitals use trauma list systems, patients admitted one day being held over to the next before undergoing surgery. Previous work has shown that delays of 13-48 hours are not necessarily detrimental to patients' wellbeing.<sup>2</sup> Such work, however, emphasises the delay between admission and surgery rather than between injury and operation, the two observations often being widely different. Some of our patients had languished at home for several days before being admitted to hospital; thus in these cases

there was a short interval between admission and surgery but an unacceptable delay between injury and surgery.

Loss of independence is perhaps the most important social problem relating to patients with fractures of the femoral neck, resulting in blocked beds and overloading of social and primary care services. What then should be done to avoid this for the elderly patient who arrives in the accident and emergency department with a hip fracture? We believe that if she is otherwise fit every effort should be made for her to undergo surgery at the earliest opportunity. To include such patients in a standard trauma list system, however convenient it may be for surgeons, anaesthetists, and administrators, is to exacerbate a situation that is already out of control.

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(Accepted 20 August 1986)

## Trial of early nifedipine in acute myocardial infarction: the Trent study

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### Abstract

Over 30 months 9292 consecutive patients admitted to nine coronary care units with suspected myocardial infarction were considered for admission to a randomised double blind study comparing the effect on mortality of nifedipine 10 mg four times a day with that of placebo. Among the 4801 patients excluded from the study the overall one month fatality rate was 18.2% and the one month fatality rate in those with definite myocardial infarction 26.8%. A total of 4491 patients fulfilled the entry criteria and were randomly allocated to nifedipine or placebo immediately after assessment in the coronary care unit. Roughly 64% of patients in both treatment groups sustained an acute myocardial infarction. The overall one month fatality rates were 6.3% in the placebo treated group and 6.7% in the nifedipine treated group. Most of the deaths occurred in patients with an in hospital

diagnosis of myocardial infarction, and their one month fatality rates were 9.3% for the placebo group and 10.2% for the nifedipine group. These differences were not statistically significant. Subgroup analysis also did not suggest any particular group of patients with suspected acute myocardial infarction who might benefit from early nifedipine treatment in the dose studied.

### Introduction

Nifedipine is a substituted dihydropyridine with calcium channel blocking properties.<sup>1</sup> Compared with verapamil it has very little cardiac electrophysiological effect.<sup>2</sup> In experimental myocardial infarction in animals pretreatment with nifedipine in a dose carefully regulated to avoid a large fall in blood pressure and reflex tachycardia causes an increase in coronary blood flow in both normally perfused and ischaemic areas of the heart, delays the release of cytoplasmic enzymes and the intracellular accumulation of calcium, preserves intracellular stores of adenosine triphosphate, and reduces infarct size.<sup>3,6</sup> Nifedipine is active during periods of ischaemia and also during subsequent reperfusion.<sup>3</sup> This has led to speculation that the drug may have a "cardioprotective" action in man.

In angina nifedipine has been shown to increase coronary perfusion and decrease afterload with minimal decrease in contractility<sup>7,8</sup> and is thereby thought to stabilise the imbalance between oxygen supply and oxygen demand. Roberts and coworkers have shown that nifedipine produces similar haemodynamic effects in patients with acute infarction, suggesting that in this condition also the drug may be capable of improving a myocardial oxygen deficiency.<sup>9</sup> Nifedipine also inhibits coronary artery spasm<sup>10,11</sup> and exerts a mild antiaggregatory effect on platelets,<sup>12</sup> both effects that have been implicated in myocardial infarction.<sup>13</sup>

The study by Roberts *et al* also suggested that treatment with

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