Advancing age is not a reason to withhold ERCP

SIR—Endoscopic retrograde cholangiopancreatography (ERCP) provides an attractive less invasive alternative to surgery for the management of biliary and pancreatic disease [1]. However, the presence of comorbidities in elderly patients places them at increased risk undergoing such an invasive procedure. It would appear that ERCP is being increasingly required in the elderly because of the rising life expectancy and the increased incidence of biliary tract and pancreatic pathology in this population [2, 3]. The studies to date report that ERCP in the elderly is not only safe but also associated with a high biliary cannulation rate [4, 5]. However, these studies have certain limitations in that not all have been comparative, some have examined only a small number of patients while others have not analysed outcomes in very elderly patients. We performed a retrospective case control study to determine if the incidence of ERCP in the elderly is rising and to compare the outcomes of this procedure in a large number of patients at least 80 years of age with a younger population.

Methods

We identified an elderly and a younger group from a prospectively maintained single centre ERCP database. The elderly group included all patients over the age of 80 years (mean age 85 years, range 80.0–100.8 years, 55% female, 45% male). The younger group was computer selected from patients under the age of 55 years.

This group was matched for sex (55% female, 45% male), contained a similar number of patients as and had a mean age 40 years less than the elderly group (mean age 45 years, range 32.7–54.9 years).

We looked at the annual incidence of ERCP performed in the elderly population over this 9-year period and compared procedure outcomes in terms of technical difficulty and safety to the younger group.

The results of repeat procedures in those patients who had more than one ERCP were excluded.

The technical difficulty of the procedure was analysed through parameters including successful bile duct cannulation, need for needle knife sphincterotomy for bile duct access, the sphincterotomy rate and finally whether biliary tract stones were successfully extracted or stent insertion was required for biliary drainage. The safety of the procedure was determined by the risk of complications including the mortality rate. Bleeding was classified as mild when it settled spontaneously, as moderate when tamponade injection with adrenaline in saline was required for haemostasis and as severe when blood transfusion was needed.

The chi-square test was used to analyse the results. $P$ values $<0.05$ were considered to be statistically significant.

Results

A total of 3,150 ERCP procedures have been performed at our institution from July 1998 to July 2007. Of these patients, 573 (18.2%) were found to be more than 80 years old. The younger group included 571 patients. A total of 34 (15.7%) ERCPs were performed in the elderly group in 1998. This rose to 103 (23.3%) in 2007 resulting in a significant increase of 48.4% in the number of ERCPs performed in the elderly over this 9-year period ($P < 0.02$). Data from the central statistics office show that the total population over the age of 80 years has increased by 25.8% over the same time period (Figure 1).

Bile duct cannulation was successful in 91.8% of elderly patients. This was not significantly different to a cannulation rate of 92.5% in the control patients. The need for sphincterotomy for bile duct access was greater in the elderly patients (17.7% vs. 10.5%, $P < 0.001$). A total of 7.8% of elderly and 25.9% of younger patients were found to have a normal ERCP. Following exclusion of these patients, we found that there was no difference in the endoscopic sphincterotomy rate between the two groups (96.7% in the elderly vs. 97.2% in the younger group). Please see Appendix 1 (available on Age and Ageing online).

The incidence of choledocholithiasis was significantly higher in the elderly group (60.8% vs. 53%, $P < 0.02$). Definitive treatment of biliary tract stone disease was more effective in the control group. This was reflected in a higher incidence of successful stone extraction (74.0% vs. 41.5%, $P < 0.0001$) and a lower incidence of plastic stent insertion for biliary drainage in this group (26.0% vs. 48.5%, $P < 0.0001$). Malignant biliary strictures including cholangiocarcinoma and pancreatic cancer were significantly higher in the elderly group (19.9% vs. 6.3%, $P < 0.0001$). Metal stenting of these strictures was also higher in this group (78.0% vs. 18.0%, $P < 0.0001$). Please see Appendix 2 (available on Age and Ageing online).

There were no complications in those patients who had a failed or a normal procedure. Hence the complication rate was based solely on therapeutic ERCPs. There was no significant difference in the complication rate between the two groups (1.6% in the elderly group and 2.0% in the younger group). There were no deaths in either group (Table 1).
Table 1. ERCP complication rate. The total number in each group refers to those who underwent therapeutic ERCP thereby excluding failed and normal procedures, in which there were no complications. The overall complication rate between the two groups was not significant (ns)

<table>
<thead>
<tr>
<th></th>
<th>Elderly group (n = 485)</th>
<th>Younger group (n = 391)</th>
<th>( p ) value</th>
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<tbody>
<tr>
<td>Bleeding</td>
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</tr>
<tr>
<td>- Mild</td>
<td>4</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>- Moderate</td>
<td>2</td>
<td>2</td>
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<tr>
<td>- Severe</td>
<td>0</td>
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<tr>
<td>Pancreatitis</td>
<td>1</td>
<td>0</td>
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<td>Perforation</td>
<td>1</td>
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<td>Mortality</td>
<td>0</td>
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<tr>
<td>Overall</td>
<td>8 (1.6%)</td>
<td>8 (2.0%)</td>
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Discussion

Endoscopic cannulation of the papilla of Vater was first described in 1968 [6]. At that time the average life expectancy in Ireland was 68.8 years in males and 73.5 years in females. Since its introduction ERCP has remained an important therapeutic tool for management of biliary and pancreatic disease. In this time the life expectancy in Ireland has risen to 75.1 years in males and 80.3 years in females [7].

Our data demonstrate that in the last decade there has been a significant increase in the number of ERCPs performed in the elderly. There has also been an increase in the population over the age of 80 years [8]. The 50% increase in the number of ERCPs performed, in comparison to the 25% increase in the total population, suggests that this a true increase in the incidence of ERCP performed in the elderly rather than a reflection of an increase in the at-risk population.

The studies to date concerning ERCP in the elderly conclude that it is both efficacious and safe. However they have certain limitations. Deans et al. and Agarwal et al. included outcomes in patients as young as 60 years of age [9, 10]. In contrast, the mean age in our study was 84.7 years for males and 85.1 years for females. Other studies are non-comparative with a younger population [11, 12]. Our analysis compares outcomes with a group, matched for sex with a mean age 40 years less than our elderly study population. Further studies are limited by their sample size. Ashton et al. and Fritz et al. report on ERCP outcomes in the over 80-year-old age group in 101 and 97 patients, respectively [13, 14]. In contrast our results are based on ERCPs performed in 573 patients over the age of 80 years.

The overall success at bile duct cannulation did not vary between the two groups. However, the increased requirement for needle knife fistulotomy in the elderly population reflects that cannulation in this group was more difficult. Needle knife fistulotomy, performed when conventional cannulation techniques fail, can be associated with a higher risk of complications [15]. Endoscopic sphincterotomy is performed following cannulation to facilitate stent insertion or stone extraction and can be associated with risks including bleeding and perforation. There were a larger number of diagnostic ERCPs in the younger group, performed before the local introduction of MRCP. Sphincterotomy is not performed in such procedures. Excluding such patients, in addition those who had a failed procedure, we found that both the sphincterotomy and complication rates were similar in those who underwent a therapeutic ERCP in both groups. Indeed there were no complications associated with failed or normal ERCPs in either group. The complication rate in both groups was not entirely comparable because of the greater number of stones and malignant disease requiring intervention in the elderly population. Despite the greater demand for intervention the complication rate in our elderly population was not increased, illustrating that although there is a risk potential in this group, ERCP including fistulotomy remains a safe procedure in experienced hands.

The higher number of plastic stents for incomplete duct clearance of stones in the elderly group can be explained by larger and more numerous stones and an unfavourable risk benefit ratio in this higher risk population. In addition, we did not include repeat procedures where successful clearance may have followed. Such stents are prone to blockage...
thereby increasing the risk of cholangitis and thus the overall morbidity.

Both cholangiocarcinoma and pancreatic cancers were found more commonly in the elderly group. Metal stenting is performed in cases where surgery is not an option and this is reflected in the higher number of these stents in the elderly population with malignant strictures. In contrast, plastic stenting provides temporary relief of obstructive symptoms prior to more definitive surgical intervention. This is reflected in more frequent insertion of these stents in the younger population.

ERCP is being increasingly utilised in the elderly population at high risk undergoing invasive procedures. It remains a technically feasible and safe procedure with a low rate of complications in this population.

Key points

- ERCP is being increasingly utilised in the elderly population.
- ERCP in the elderly is a technically feasible procedure with a high success rate, comparable with a younger population.
- ERCP in the elderly is a safe procedure with a low complication risk, comparable with a younger population.

Conflicts of interest

There are no conflicts of interest.

Supplementary data

Supplementary data are available at Age and Ageing online.

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References


Screening instruments for delirium in older people with an acute medical illness

SIR—As a medical professional we are not especially good at diagnosing delirium in older people, with up to two-thirds of cases being either misdiagnosed or undetected [1]. This is largely due to many of the older people having dementia, with the features of delirium often difficult to distinguish. Delirium is associated with significant morbidity and mortality in older people, and their protracted hospital stays [2] have implications for finances and bed availability within our healthcare service. Any steps taken to improve the diagnosis and management of this syndrome would be of great benefit to both patients and the NHS.

The British Geriatrics Society (BGS) recently produced clinical guidelines to improve prevention, diagnosis and management of delirium in older people in hospital [3]. In these guidelines, diagnosis of delirium is aided by screening for cognitive impairment on admission using the Abbreviated Mental Test (AMT) or Mini-Mental State Examination (MMSE), followed by the CAM screening instrument to confirm delirium [4, 5].