Strategies In
Surgery

Seniors Best Served by Unique Surgical Approach

- Preoperative Care
- Perioperative Care
- Postoperative Care
- Striving for Improvement

Ciaran M. O'Hare, M.D.,
Assistant Professor,
Department of Surgery

Marie A. Bernard, M.D.,
Donald W. Reynolds
Professor and Chair,
Department of Geriatric
Medicine

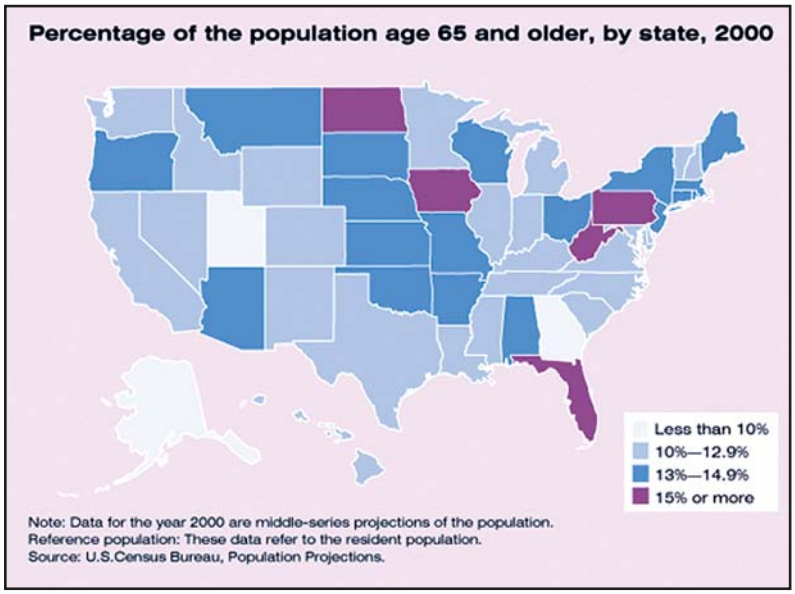

Figure A

In response to an increased number of older patients presenting for both elective and emergency surgery, OU Physicians Surgeons, in conjunction with OU Physicians Senior Health Center Geriatricians, provide a program to address the specific needs of geriatric patients. Patients who would benefit from this service are identified preoperatively and then managed jointly throughout their hospital stays and postoperative rehabilitation. This program includes ongoing research to study aspects of management and preoperative preparation that will enhance positive outcomes in this patient population.

The population growth of those ages 65 and older has affected every aspect of our society, presenting unique challenges to families and health care providers. In 2000, national census data showed that 13 percent of the total population was age 65 or older. In Oklahoma, this is closer to 15 percent (Figure A), and this continues to increase. Patients over age 65 account for 40 percent of all surgical procedures and, disproportionately, half of emergency operations and three-quarters of surgical mortality.

Surgery in the elderly is especially rewarding as an improved quality of life after

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successful elective surgery can be more dramatic than in younger people[1]. We believe that most health problems in the elderly are effectively treated through a multidisciplinary approach and have applied this philosophy to our surgical practice. Katlic[2] has stated these principles succinctly (Figure B). This program defines a successful outcome as maintaining or improving an older patient's independence and quality of life while not increasing the burden on caregivers. When patients are referred to this program, our surgeons and geriatricians work in conjunction with the referring physician, providing updates and jointly managing the care of the patient. After postoperative care is completed, the patient is returned to the care of the referring physician.

Figure B. Principles of Geriatric Surgery

I. The *clinical presentation* of surgical problems in the elderly may be subtle or somewhat different from that in the general population. This may lead to delay in diagnosis.
II. The elderly handle stress satisfactorily but handle severe stress poorly because of a *lack of organ system reserve.*
III. Optimal *preoperative preparation* is essential, because of principle II. When preparation is suboptimal, the perioperative risk increases.
IV. The results of elective surgery in the elderly are reproducibly good; the results of emergency surgery are poor though still better than nonoperative treatment for most conditions. The risk of *emergency surgery* may be many times that of similar elective surgery, owing to principles II and III.
V. Scrupulous *attention to detail* intraoperatively and perioperatively yields great benefit, as the elderly tolerate complications poorly, owing to principle II.
VI. A patient's age should be treated as a *scientific fact, not with prejudice.* No particular chronologic age, of itself, is a contraindication to operation (because of principle IV).

PREOPERATIVE CARE

While data is scarce, most studies indicate that age alone is not a significant barrier to surgery and that morbidity is dependent on the avoidance of complications[3]. Simple observational tools, such as evidence of vigorous physical and mental activity and a generally high quality of life, seem to be predictive of adequate functional reserves and improved outcomes in elderly surgical patients. However, as individuals age differently and react to the fact of their aging differently, individual risk for surgery can be difficult to assess.

During an initial consultation with a patient and his/her family, our geriatric surgeons assess functional status, both mental and physical, and look for comorbidities. Most especially we assess cardiac and pulmonary function problems, which account for 50 percent and 30 percent of all surgical complications, respectively. The patient's expectations and goals and the family's role in returning the patient to full independence are carefully discussed. We stratify the patient based on the risk of significant morbidity or significant threat to the patient's quality of life or independence.

Patients then fall into one of three broad categories:

1) Patients with significant comorbidities, marginal functional reserve, or in whom the surgery is likely to significantly impact their independence. These patients are referred to our geriatricians for a more detailed preoperative assessment, and a formal plan for the operative and postoperative period is determined. Patients are jointly managed by both their surgeon and geriatrician while in the hospital.

2) Patients with controlled, but significant risk factors. The operation will be scheduled with an arrangement for a formal geriatric medicine consultation in the postoperative period. Geriatricians will consult with these patients while in the hospital.

3) Patients deemed at low risk for the procedure. These individuals will be managed as younger patients would be managed.

Current prognostic tools such as the ASA Score or APACHE Score are geared to the younger and more acutely ill person and do not adequately address quality of

life or caregiver burden issues that are significant factors in elderly patients. Therefore, we have developed a simple set of parameters to identify which elderly patients are most at risk. Continuous, open communication with the patient and family members prior to surgery helps ensure a thorough risk assessment.

Finally, it is always appropriate to address 'end of life' and 'limit of care' issues, to record the patient's wishes and the family's agreement, and to consider who has the legal power to make decisions if the elderly patient becomes incapacitated.

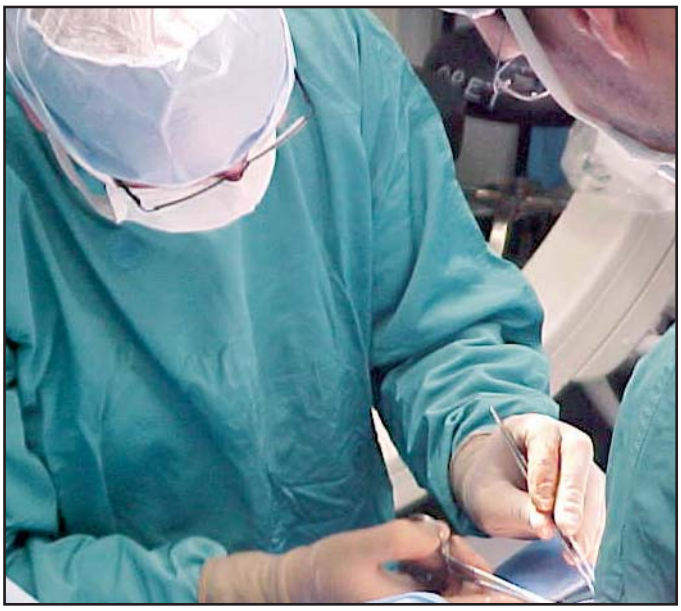
PERIOPERATIVE CARE

To avoid undue stress to the patient we try to limit preoperative fasting and use the least debilitating bowel preparation. Where applicable, patients are cardio protected using Beta-blockers (Metaprolol 10 mg for a week before and five days after surgery). Elderly patients have an increased vulnerability to heat loss, and once core body temperature drops to below 36 degrees Celsius, it is very slow to recover. Hypothermia is associated with reduced macrophage function, reduced wound healing, and increased postoperative complications[4].

POSTOPERATIVE CARE

Optimal pain control is critical to a positive outcome. It aids mobilization, reduces mental disturbance and increases the patient's participation in his/her recovery. Most of the side effects misattributed to narcotic medication are actually precipitated by the pain itself. By using intraoperative local anesthetic, regional blockade and PCA pumps, pain is quickly controlled after surgery. Nasogastric tubes and Foley catheters are removed as quickly as possible and low molecular weight Heparin is used liberally to avoid the restrictive effects of intermittent compression devices.

A clinical pathway appropriate to the patient's surgery based on the principles of early mobilization and early feeding is applied. The role of ancillary services such as nutrition, nursing and physical therapy are particularly important components in the postoperative



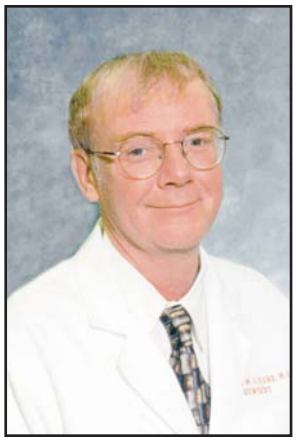
care of geriatric patients. For patients requiring a longer period of postoperative recovery, the goal is a quick transfer from acute care to a skilled nursing or rehabilitation center. All patients and family members are then surveyed at a postoperative visit as to which elements of their care were most beneficial.

STRIVING FOR IMPROVEMENT

It is surprising how little data has been gathered on the elderly as a select group of patients presenting for surgery. Most studies focus on crude mortality and morbidity data gathered in the early postoperative period. We believe that success in these areas is not sufficient and that we should strive to provide long-term improved health, allowing patients to fulfill their life goals.

The collaborative effort between OU Physicians Surgeons and Geriatric Medicine is committed to identifying the long-term effects of surgery on the patients' quality of life and the impact on their immediate family. This data will allow us to identify patients most at risk and to develop strategies to return our elderly patients to a full and rewarding life.

References:



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1. Zenilman, ME. Advances in Surgery in the Elderly. New York: World Medical Press; 1993.
2. Katlic, MR. Principles of Geriatric Surgery. In: Rosenthal, RA; Zenilman ME; Katlic, MR., editors. Principles and Practice of Geriatric Surgery. New York: Springer-Verlag; 2001, p. 93.
3. Lubin MF. Is age a risk factor for surgery? Med Clin North Am 1993 Mar;77(2): 327-33.
4. Kenney WL. Control of heat-induced cutaneous vasodilatation in relation to age. Eur J Appl Physiol Occup Physiol 1988;57(1):120-5.

Figures A and B. Older Americans 2000: Key Indicators of Well-Being. [Internet]. Hyattsville (MD): Federal Interagency Forum on Aging-Related Statistics. [updated 2004]. Available from <http://www/agingstats.gov/chartbook2004>.

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