Surgery for epilepsy leads to around half of patients being seizure-free after 10 years

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Around half of patients remain seizure free 10 years after undergoing surgery for epilepsy. However, there is scope for further improvement in presurgical assessment and surgical treatment of people with chronic epilepsy. The findings are reported in an Article published in this week's surgery special issue of *The Lancet,* written by Jane de Tisi, Dr Gail S Bel, and Professor John Duncan, National Hospital for Neurosurgery, and Imperial College London, and colleagues.

In this new work, the authors identified long-term outcome of epilepsy surgery in adults by establishing patterns of seizure remission and relapse after surgery. Long-term outcome of surgery for epilepsy in 615 adults was analysed (497 anterior temporal resections, 40 temporal lesionectomies, 40 extratemporal lesionectomies, 20 extratemporal resections, 11 hemispherectomies, and seven palliative procedures [corpus callosotomy, subpial transection]), with a median annual follow-up of 8 years.

The authors estimated that 52% of patients remained seizure free (apart from simple partial seizures [SPS]) at 5 years after surgery, and 47% at 10 years. Patients who had extratemporal resections were twice as likely to have seizure recurrence than were those who had anterior temporal resections. For those having temporal lesionectomies, no difference from anterior temporal lobe resection was recorded. Those with SPS in the first 2 years after temporal lobe surgery had a two-and-a-half times greater chance of subsequent seizures with impaired awareness than did those with no SPS. Relapse was less likely the longer a person was

seizure free and, conversely, remission was less likely the longer seizures continued. In 18 (19%) of 93 people, late remission was associated with introduction of a previously untried antiepileptic drug. 104 of 365 (28%) seizure-free individuals had discontinued drugs at latest follow-up.

Drilling deeper into the data, the authors reveal that 40% of patients have long-term complete seizure freedom after epilepsy surgery, with a further 11% having only SPS. Although 82% had at least 1 year with no seizures or only SPS, this does not indicate cure. No patient had substantial worsening of epilepsy. The authors say that clinical practice should change to sooner refer appropriate patients for possible surgery. At the moment, best practice is to consider surgery for focal epilepsy only if drugs have not been effective for controlling seizures for over 2-3 years. Selection process and surgical methods need improvement to increase success rates and to more accurately identify those who will not benefit from surgery. Some previous studies could, say the authors, have implied overoptimistic expectations.

The fact that SPS continuing in the first 2 years after surgery increases the chances of seizures recurring compared with those entirely seizure free is a new finding has not been previously reported. Such important information might affect the decision to taper or continue antiepileptic drugs. Interestingly, most people who are seizure free after surgery choose to remain on an antiepileptic drug. No prospective randomised trial is available of cessation or continuation of antiepileptic drugs after surgery, and consideration of either pregnancy or obtaining a driving licence seem to be major factors in an individual's decision making. Elaborating, the authors explain that taking antiepileptic drugs is not a bar to driving. The key is to be free of seizures for 12 months, and to remain seizure free. Taking a single antiepileptic drug through pregnancy carries a 2-3% risk of major congenital malformation, so if a female is seizure free following surgery and is contemplating pregnancy, she may well consider seriously stopping medication prior to conception.

The authors conclude: "For seizure outcome, surgery is successful for many individuals in whom antiepileptic drugs have not been effective, but further improvements need to be made to presurgical assessment to further increase rates of success."

In a linked Comment, Dr Ahmed-Ramadan Sadek, and Professor William Peter Gray, Wessex Neurological Centre, Southampton University Hospitals NHS Trust and University of Southampton, UK, say the new data will be useful for counseling epilepsy patients and guiding their physicians. They conclude: "This study validates the long-term effectiveness of epilepsy surgery showing that over 50% of all patients are rendered continuously long-term seizure free; it also raises important questions and challenges. Are the benefits of seizure freedom apportioned equally to the continuous and later remission groups? Can selection and reselection strategies be further improved to optimise long-term seizure control? Finally, the median duration of epilepsy before surgery in this study was 20 years. In view of the long-term results of surgery shown, clinical practice needs to change with the early referral of appropriate patients."

More information: Paper online: www.thelancet.com/journals/lan … (11)60890-8/abstract

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