Postoperative nausea and vomiting (PONV) is one of the most common postoperative complications, affecting up to as many as 40 per cent of patients. The patient most likely to vomit is a young, non-smoking, overweight woman who has undergone gynecological surgery. Also at risk are patients with a history of PONV and those with a history of motion sickness (in a car or airplane or at sea).

All anesthesia agents have been blamed, with opiates most often implicated. Indeed, anesthesia is most often blamed for all PONV, even when nausea and vomiting occurs days after the operation and all traces of the anesthesia agents have disappeared from the body.

Other factors may contribute, including:

• preoperative conditions, such as vomiting, increased pressure in the brain, intoxication with alcohol or other medications

• operations on the eyes, the inner ear, the testicles, or tonsils
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• postoperative conditions, such as the presence of blood in the stomach (which no anti-emetic can counter) or blockage of the bowel

• pain and anxiety

• the presence of other vomiting patients or the smell of food

• rapid movement (as on a stretcher) or even slight elevation of the head from the pillow

• pain-relievers given during anesthesia or in the postoperative period.

Many of these factors can be avoided or treated, to reduce the chance of postoperative nausea and vomiting occurring. Your anesthesiologist makes all attempts to ensure that you do not suffer from PONV. However, complete prevention of this complication is not possible.

Dental damage

Although anesthesiologists are very careful to avoid contact with the teeth, damage may occur when metal or hard plastic instruments are used to maintain an open airway, to help with insertion of the breathing (endotracheal) tube, or to suck out secretions from the mouth and back of the throat. In most cases, damage occurs at the time of tracheal intubation, in about one in every 1000 intubations. Dental damage may also occur when a patient bites down on an oral airway during recovery from anesthesia. The force generated is enough to break both natural and restored teeth and has been noted in between a quarter and a half of all reported cases of dental damage.

Although human teeth are very strong, they become more brittle with age. Just as you may chip
a tooth while eating, the same may occur during intubation. Cosmetic dental work, with veneers, crowns or bridges, is a particular concern, as these structures are not as strong as natural teeth.

If you have had dental work, especially on your front teeth, then you should inform your anesthesiologist and discuss any concerns you might have. You should also point out any teeth which are loose. You may be able to lessen the risk of damage by having an alternative technique to general anesthesia, such as regional anesthesia (if appropriate). However, in some cases, general anesthesia with an endotracheal tube is necessary. Attempting to avoid tracheal intubation, for example by using a mask, may lead to other complications, such as aspiration of stomach contents into the lungs. Some anesthesiologists try to prevent dental damage by removing the oral airway before their patients regain consciousness and replacing it with a soft short tube placed in one nostril. (This is known as a nasal airway.)

Should any of your teeth be damaged or lost during anesthesia or surgery, or while you are in the Recovery Room, you will need emergency treatment. This includes re-insertion of the tooth (if appropriate) and emergency dental consultation (if available). Great effort should be made to locate any missing teeth and you may need to have a chest X-ray to ensure that you have not inhaled the tooth. If you have and the tooth is not removed from your lung, then there is a high probability of pneumonia.

Similarly, children may undergo anesthesia when their first teeth are about to be lost. These first teeth are very easily dislodged, and you should tell the anesthesiologist which teeth are loose. Sometimes parents request the anesthesiologist remove a tooth that is about to fall out!

Adults with loose teeth should see a dentist, if possible, before anesthesia. The same suggestion applies if any of the teeth are badly broken or decayed. In addition, professional dental cleaning is recommended for patients who have gum disease, especially for those patients who are scheduled to have a major operation.

**Bruises**

Patients often develop a small bruise at the site of insertion of the intravenous cannula, in the back of the hand, in the forearm near the wrist, or in the bend of the elbow. These bruises can
become painful and may take a week or so to resolve. Elderly patients, and those with fragile skin and veins, bruise more easily and the bruise often takes longer to disappear.

**Eye problems**

Various types of eye damage may occur. The cornea or surface of the eye may be scratched when the eyelids are not completely closed, particularly if the face is covered with drapes or towels. Some anesthesiologists choose to secure the eyelids closed with tape - although certain patients may develop skin reactions and others may complain of loss of eyelashes after removal of the tape. Other anesthesiologists choose to insert a lubricating ointment into the eye - although eye infections have been reported if the ointment is contaminated. Some patients have complained of blurring of vision for a few hours postoperatively, because of the residual ointment. However, corneal damage may occur even if the eye is lubricated and taped shut. The presence of make-up, such as mascara, is potentially hazardous.

Blindness after both general and regional anesthesia is rare, but it can occur. Loss of vision may result from pressure on the eye. It may be that the arteries at the back of the eye (retina) become compressed, thus depriving the eye of oxygen. Smokers are more at risk than are nonsmokers, because nicotine constricts or narrows arteries, further depriving the eye and the brain of oxygen. Temporary blindness may also occur after spinal anesthesia for resection of the prostate gland in men. This is due to the effect of a special chemical in the fluid placed in the bladder by the surgeon during the course of the operation.

**Nerve damage**

Almost any nerve can be damaged. Nerves of the face may be damaged by pressure from the anesthesia breathing circuit or from the anesthesiologist's fingers holding the facemask on and the chin forward. The most common nerve injury is to the ulnar nerve at the elbow, from compression against a hard surface. In general, the prevention of nerve damage is by careful positioning and padding of the patient during anesthesia. In the past, the cause of postoperative nerve damage was always thought due to improper positioning of the patient; however, some patients who develop nerve damage have been found to have a pre-existing problem.
**Nosebleed**

Sometimes, instead of passing the breathing (endotracheal) tube through your mouth, your anesthesiologist chooses to pass it into one nostril and down the back of the throat and into your voice box (larynx). This change in route may still involve insertion of the laryngoscope into your mouth, so that your anesthesiologist can see where he or she is placing the tube. Nasal intubation is normally used for operations around the face and mouth.

Insertion of the tube through the nostril often results in some bleeding from the nose after the tube is removed. This bleeding normally stops after a few minutes, although seeing the nose bleed may be distressing to family members.

**Blood clots**

Certain patients are at increased risk of having blood clots - for example, those taking oral contraceptives or hormone replacement. Certain surgical procedures also increase the risk of clots, such as operations that last several hours or are on the lower part of the body. In general, anesthesia does not increase the risk of having a blood clot.

**Brain damage**

Some operations may lead to a decrease in intellectual ability, for example, after major brain or open heart surgery. Other patients are at risk because of pre-existing medical conditions, such as age-related loss of memory. Elderly patients, particularly those with progressive heart
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disease, high blood pressure or a history of minor strokes may suffer permanent changes after anesthesia. This may be a result of a change in critical blood supply to certain parts of the brain, altering specific chemicals in the brain.

Blood supply to the brain may be subtly altered by a decrease in the amount of carbon dioxide in the blood and by slight changes in blood pressure. Many anesthesia medications have side effects which can alter blood flow, although modern medications are less likely to produce these effects.

On rare occasions, patients have suffered brain damage due to lack of oxygen delivery to the brain. Even though all aspects of the anesthesia care are carefully monitored during anesthesia, sometimes problems can occur.