Toxic Shock Syndrome (TSS)

Toxic shock syndrome (TSS) is an infection caused by staphylococcus or streptococcus bacteria. These bacteria produce toxins (*poisonous chemicals*) that get into the bloodstream and damage the vital organs, including the liver, kidney, and lungs. TSS occurs when bacteria enter the body through breaks or cracks in the skin or other tissue. It occurs mostly in menstruating women who are using:

- High absorbency tampons.
- Diaphragms.
- Sponges.
- Cervical caps.

It can also occur in menopausal women, men, and children. TSS is also seen in surgical, hospital, long-term care patients and where people live in close quarters.

Tampons can cause scrapes on the vaginal wall. This damage allows bacteria to enter into the vaginal wall. Super absorbent tampons are more harmful, because they expand so much that they actually stick to the vaginal wall. When the tampon is removed, a layer of the vaginal lining may be scraped or peeled off.

SYMPTOMS

Symptoms of TSS occur suddenly, usually during or just after a menstrual period. The more common symptoms include:

- High fever (usually 102° F (38.9° C) or higher).
- Vomiting.
- Diarrhea.
- Sunburn-like rash.
- Drop in blood pressure.
- Muscular aches and pains.
- Headaches, sore throat.
- Bloodshot eyes.
- Confusion.
- Peeling of the skin on the palms and soles.
- Increase in heart rate.

These symptoms are important to recognize. Prompt medical attention is needed.

TSS can be a life-threatening infection. Shock, kidney and liver failure, lung damage, and death have all been associated with TSS. This is a result of a decrease in the red blood cells and lack of oxygen to the vital organs. It can also cause blood clotting and bleeding problems. 5% of women who get TSS die from it.

DIAGNOSIS

- The symptoms themselves should make the caregiver highly suspicious of TSS, especially if the person is having a menstrual period and using tampons.
- Blood tests.
- Blood and skin (*infection site*) cultures.
- Cultures from the vagina, respiratory mucus (*sputum*), and throat.
- Chest X-ray.
- Analysis of urine (*urinalysis*).
- Sometimes, a lumbar puncture to check the spinal fluid.

TREATMENT

- Hospitalization is recommended. There is no way of predicting which individuals with early TSS will develop severe medical problems.
- Immediate removal of the tampon, diaphragm, sponge, or cervical cap.

- Your caregiver will order anti-staphylococcal antibiotics. These medicines will kill the germ. Intravenous fluids and medicine (IV) will also be given to raise low blood pressure and to replace fluid and body salts (*sodium, potassium*) lost from the vomiting or diarrhea.
- Dialysis may be needed when there is severe kidney involvement.
- Kidney transplant may be necessary, in rare cases.
- Surgery is rare, but sometimes it is used to remove infected tissue.
- Intravenous immune globulin (IVIG) may be given in severe cases, if TSS is not improving. This may or may not help, but it does not make the TSS worse.

People who get proper treatment usually get well within 2-3 weeks.

RISK FACTORS

- Lacking enough antibodies against the staph and strep bacteria in your body.
- Diabetic people.
- Problems or disease affecting your immune system (HIV, organ transplant patients).
- Cancer patients.
- Prolonged use of tampons (especially super absorbent), diaphragms, sponge, or cervical cap.
- Recent childbirth (within 12 weeks), if one of your children has strep throat.
- Any type of skin injury, especially if it breaks the skin.
- Muscle infections.
- Respiratory infections, including sinus, throat, tonsils, and pneumonia.
- Using tampons, sponge, diaphragm, IUD (*intrauterine device*), or cervical cap.

PREVENTION AND HOME CARE INSTRUCTIONS

- Follow recommended tampon guidelines.
- Avoid super absorbent tampons.
- Alternate the use of tampons with sanitary napkins or pads during your period. Use tampons during the day and pads at night.
- Never leave a tampon inserted overnight.
- Change tampons often, at least every 4-6 hours.
- Do not leave in diaphragms, sponges, or cervical caps longer than instructed on the label information.
- Wash your hands with soap and warm water before inserting and removing a tampon, diaphragm, sponge, or cervical cap.
- When inserting a tampon, be extremely careful not to scratch the vaginal lining. Plastic applicators may cause an increased risk because of the sharp edges produced when opening the applicator. If your vagina seems dry, use a water-soluble lubricating jelly. This will ease insertion.
- Do not use a tampon between periods. It may dry out the vagina.
- Use 100% cotton tampons instead of those made with synthetic materials.
- If you have had TSS, do not use tampons ever again. Consider natural alternatives, like a sea sponge tampon or the menstrual cup, or use a sanitary pad.
- Always choose the tampon with the least absorbency to meet your needs.
- At the first sign of a fever or rash, remove the tampon immediately. This may help prevent your symptoms from getting worse. Seek medical care immediately.
- Do not use gauze packing for a nosebleed.
- Wash cuts and scrapes with warm water and soap.
- Keep scrapes and cuts covered to prevent infection from developing.
- Finish all the antibiotics and other medicine given to you by your caregiver.
- If you were just treated for TSS, take your temperature at least twice a day for the next 7 to 10 days.
- Do not leave your diaphragm or sponge in for longer than 12 hours.
- Do not use tampons, sponge, cervical cap, or diaphragm for 12 weeks after delivering a baby.

SEEK MEDICAL CARE IF:

- You lost or think you forgot a tampon in the vagina.
- You cannot get a sponge or diaphragm out of the vagina.
- You cannot remove a cervical cap.

SEEK IMMEDIATE MEDICAL CARE IF:

- You are using a tampon, and you develop a fever, chills, vomiting, diarrhea, or rash, with or without headache.
- You are using a tampon while menstruating, and you have a convulsion or pass out.
- You think you have TSS.
- You have a cut or surgery, and the skin becomes red, swollen, or shows pus draining from the wound.
- You have an oral temperature above 102° F (38.9° C), not controlled by medicine. This occurs 7 to 10 days after you were treated for TSS.
- You develop red streaks from the site of a skin injury, piercing, or tattoo.
- You just had a baby, within 12 weeks, and one of your children has strep throat.

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