

DIVERTICULAR DISEASE - a patient's guide

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What is diverticular disease?

Diverticular disease is the medical term encompassing both diverticulosis and diverticulitis. It is derived from the term diverticulum, meaning an out-pouching or pocket formed in a hollow organ such as the bowel. Multiple out-pouchings or pockets are termed diverticula and the condition is known as diverticulosis.

Diverticula develop in mechanically weak areas of the organ. In the bowel, areas of comparative weakness occur at the sites where blood vessels penetrate the muscle layers. Pouches of the large bowel occur with increasing frequency as the population ages and most over 60 year olds will have diverticulosis and almost all over 80 year olds will have bowel pockets.

If the pouches become inflamed or infected, the condition is called diverticulitis. Inflammation will occur in about 10 to 20 percent of those with diverticulosis. While diverticulosis is generally benign and, because of its frequency, can be considered a normal aging change, diverticulitis is a more serious disease with potentially lethal consequences.

What are the symptoms of diverticular disease?

Most people with diverticulosis do not have observable symptoms and most will never know that diverticula have formed in their bowel. Others may be aware of intermittent discomfort with or without an awareness of increased activity of bowel muscle. For others there may be discomfort or pain most commonly in the left lower abdomen, often with some spread to central or right abdomen.

When inflammation is present fever is likely and pain is characteristic. Nausea, vomiting, chills, loss of appetite, severe cramps and constipation are common as infection becomes established. Bleeding is uncommon but can rarely be severe.

What are the signs of diverticular disease?

The signs vary from none in diverticulosis to extreme localised tenderness in diverticulitis. A mass may be felt in the abdomen when complications have developed. Signs of obstruction of the large bowel may become prominent.

What causes diverticular disease?

The mechanism is believed to be primarily the result of a prolonged intermittent marked increases of pressure in the interior of the bowel with resultant bulging of the bowel lining in the sites of bowel relative weakness. These weak areas occur where blood vessels penetrate the muscle to bring nutrition into the lining of the bowel. As part of the digestive function of the bowel the muscles produce to and fro movements which mixes the food with the digestive juices needed to break down food to simple substances ready for absorption. In this mixing, sections of the bowel can temporarily be blocked off, pressure increased and pockets formed.

Sections of the bowel which are narrower than usual are most likely to be affected. The sigmoid colon between the descending (left) colon and the rectum is particularly prone to diverticulosis.

There are several potential factors which can cause pressure rises in excess of the average. In any one person it is likely that more than one may be operating.

There is a familial tendency to diverticulosis suggesting a genetic factor. An inherited tendency to raised pressure in the bowel has not yet been associated with a gene. It may be that these families share a common environmental factor increasing their susceptibility to high intra-bowel pressure.

The relatively high prevalence of diverticula in an aging Western population compared with the low prevalence in developing countries with a high vegetable diet supports the current theory that a diet low in plant products is a factor in the pressure changes needed to produce diverticula. This is the most generally discussed cause of diverticular disease providing the basis for much of the advice given to reduce the prevalence of diverticular disease as well as the management of established diverticular disease.

Some foods and drugs are strong stimulants of bowel muscle action and may be an aggravating factor. Such foods include spices, fats and some sauces.

The importance of emotional stress is unresolved. While not strongly favoured as a cause, it may be an aggravating factor that cannot be completely excluded as a cause.

Moderate exercise has potentially beneficial effects on the muscle activity of the bowels.

How is diverticular disease diagnosed?

The presence of typical symptoms of left lower abdominal pain, particularly if accompanied by fever, should raise suspicion of diverticulitis. A complete diagnostic work-up including colonoscopy, and radiological examinations are the basic tools for initial investigation. In the asymptomatic these procedures done for other reasons may show unsuspected diverticulosis.

Colonoscopy is examination through a flexible tube passed into the lower bowel. This allows direct visualisation of the lining of the bowel and if necessary removal of tiny pieces of tissue (biopsy) for examination under a microscope.

Radiological examinations using barium put into the bowel provide a silhouette outline of the bowel wall frequently filling the diverticula, showing a muscular wall thickened by over activity, and irritability when infection is present. Narrowing of the bowel if present is an important observation.

Additional examinations may be needed if complications are to be excluded. These may include scanning with ultrasound, computerised tomography (CT scan), and magnetic resonance (MRI).

What are the complications of diverticular disease?

Complications of diverticulosis include bleeding, infection, perforation, abscess fistula formation, and obstruction.

Bleeding from diverticula is uncommon but in rare cases it can be severe.

Infection is usually the result of the opening (mouth) of a diverticulum being blocked by faecal material or food. With a loss of drainage contents of the diverticulum stagnates providing an ideal environment for the growth of bacteria. Untreated progression will occur to abscess formation with pus, swelling, and destruction of tissue.

Large bowel obstruction occurs in about five percent of people with diverticulitis. Obstruction is the result of swelling, spasm of the muscles, and scar tissue formation. This may settle quickly as the inflammation is treated or may remain as a partial blockage due to the scar tissue narrowing of the bowel lumen (the space within the tubular bowel).

The tissue destruction occurring in association with the abscess may lead to small holes with leakage out of the colon and extension of the abscess to tissues outside the colon.

Inflammation with infection can cause tissues to stick together. When the damaged tissues stick to another organ and small perforations occur, the destroyed tissue can progress to communications between organs (fistula). Fistula occur between adjacent loops of bowel, bowel and bladder, bowel and vagina, or bowel with skin.

Is diverticular disease associated with an increased risk of cancer?

There is no evidence to suggest an increased risk of cancer of the bowel. On the other hand, there is no decreased risk. Because the symptoms of diverticulitis can be similar to those associated with bowel cancer, particular care needs to be taken to exclude colon cancer in a patient with known diverticular disease and an alteration of symptoms.

What is the treatment of diverticular disease?

If there are no symptoms there is no treatment necessary. Diverticulitis is more serious and sufferers may need bed rest, antibiotics, pain relief, admission to hospital, fluids and intravenous feeding, and sometimes surgery.

Generally a diet high in vegetables and cereals is recommended even in asymptomatic diverticulosis. The plant cell walls of vegetables (dietary fibre) and the complex starches of root vegetables and cereals are beneficial in maintaining the stools soft and ensuring regular bowel movements. Sometimes this diet is helped by supplements of bulking agents. There are a number of bulking agents with Mucilax, and Metamucil being commonly used. It is not yet certain that this dietary management does prevent progression of diverticulosis to diverticulitis.

There is no evidence to support the frequently given advice to exclude foods such as tomatoes and strawberries with small seeds. Few doctors are now recommending avoidance of these foods.

Antibiotics are needed when there is infection. Flagyl (metronidazole), tetracycline and amoxicillin are the commonly used antibiotics. Antibiotic effectiveness is best if used early in the infection.

Antispasmodic drugs may be used when the pain from cramps is present. The commonly used antispasmodics are Colofac (mebeverine), Buscopan (hyoscine N-butylbromide), or Merbentyl (dicyclomine).

What is the place of surgery in diverticulitis?

Diverticular is generally a benign condition but with potentially lethal complications. The surgical principles in complicated diverticular disease is to remove by resection the diseased segment of bowel with at the same time active management of any destruction of tissue by bacteria. Surgery is thus used when there is persisting obstruction, perforation of the bowel, uncontrolled bleeding, and/or repair of fistula.

Future trends

Expected live span is increasing in almost all communities, increasing the risk of more people developing symptomatic diverticular disease. Increasing publicity is resulting in an increased consciousness of the place of a diet rich in vegetables, fruit, cereals, and restricted in fat. It is believed that this dietary pattern accompanied by physical activity offers the best hope to reduce the formation and complications of diverticular disease.