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Breast cancer

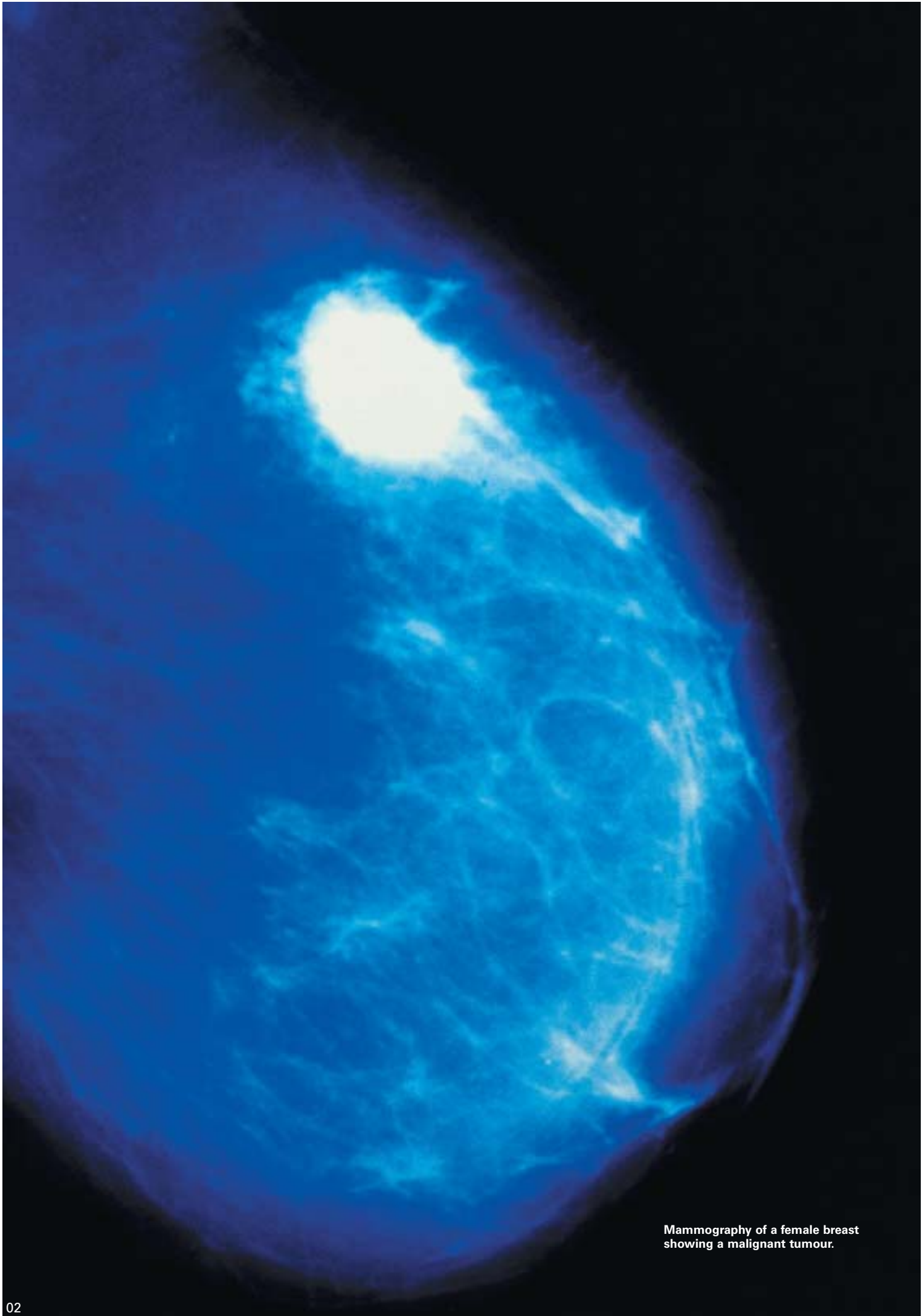


Infectious diseases



Early diagnosis of colorectal cancer





Mammography of a female breast showing a malignant tumour.

Impairments

Breast cancer

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Breast cancer

Up to 12% of all women suffer from BREAST CANCER (carcinoma of the breast) during the course of their lives. It is the most common cause of death in women aged between 35 and 55 years. The incidence of breast cancer is still rising in most industrialised nations and shows a steady increase with age.

RISK FACTORS FOR DEVELOPING BREAST CANCER

Genetic factors, hormonal changes and environmental influences play a role in the development of breast cancer. The family history may give the first indication of an increased risk of breast cancer. Women who have a first-degree relative with breast cancer and childless women have a higher risk than the average female population. Mastopathy is also a risk factor. This is a benign disease of the breast that includes various changes, including swelling, increased sensitivity of the breast, nodules and cyst formation. **MASTOPATHY** is diagnosed by palpation, ultrasound scanning and mammography. In some cases it is difficult to differentiate it from breast cancer, so that a tissue biopsy has to be examined. Severe mastopathy requires regular examinations and monitoring. Breast cancer also occurs very rarely in men.

DIAGNOSIS

Next to palpation, **MAMMOGRAPHY** remains a powerful diagnostic tool for the early diagnosis of carcinoma of the breast. This X-ray of the breast will also show tumours that are too small to be picked up on palpation. If no clear results are obtained, ultrasound scanning and magnetic resonance imaging may provide additional information. The final diagnosis of suspected findings is, however, only possible through the microscopic examination of a tissue sample obtained by fine needle biopsy.

The fine tissue examination is especially important today to ascertain the prognosis, as different types of breast cancer spread at different rates. The tumour cells are tested for special receptors for the hormones **OESTROGEN** and **PROGESTERONE** as well as HER2. Hormones and growth factors bind to these receptors and give the cancer cells the signal to grow.

TREATMENT

Treatment depends on the TNM stage and the grade of the tumour. Surgery is unavoidable in most cases. Today surgeons seek to perform breast-conserving procedures, mostly in combination with additional therapeutic measures. Axillary lymph nodes must also be removed since these are the first regions to which tumour cells spread. A **MASTECTOMY** (amputation of the breast) is required if the disease is already advanced.

Radiotherapy is routinely used today for breast-conserving treatment to prevent the disease flaring up in the region around the tumour. **RADIOTHERAPY** is usually combined with supportive (adjuvant) chemotherapy to prevent the development of metastases.

Since the hormone oestrogen frequently stimulates the growth of breast cancer, the administration of **ANTI-OESTROGENS** (e.g. tamoxifen) affects the growth of the carcinoma and its metastases. In addition, ovarian function – and hence oestrogen production – is suppressed in pre-menopausal women. This may be done by means of surgery, irradiation or drugs.

NEW THERAPEUTIC OPTIONS

Aromatase inhibitors

Aromatase inhibitors give grounds for real hope to those women whose breast cancer has oestrogen receptors. Aromatase converts androgens into oestrogens; hence aromatase inhibitors block the supply of growth-stimulating oestrogens to the carcinomatous cells. **AROMATASE INHIBITORS** should therefore be more effective than anti-oestrogens in inhibiting the growth of breast cancer and preventing recurrences, as well as having fewer side effects.

Monoclonal antibodies

In about a third of breast cancer patients, there is an increased concentration of the growth hormone receptor **HER2** in tissue samples. As soon as growth hormone binds to these receptors, the cells begin to grow and divide. This results in a very aggressive form of breast cancer. The **MONOCLONAL ANTIBODY** trastuzumab blocks HER2 receptors. Preliminary studies have shown that trastuzumab in combination with chemotherapy prolongs the survival of patients with advanced breast cancer.

PROGNOSIS

– Some two out of three women without spread to the axillary lymph nodes can be cured of the disease, but only one in four women with lymph node involvement.

– Recurrences are very common (50–80%) in patients with lymph node involvement. They usually occur within the first five years, but occasionally even after a disease-free interval of ten years.

– The ten-year survival rate is between 60–75% (Stage I) and 10% (Stage IV).

– A positive hormone receptor status is a favourable characteristic, since the tumour growth can be effectively retarded with appropriate medication.

Established risk factors

- Age
- TNM status
- Grading
- Hormone receptor status

New tumour-biological risk factors

- Urokinase-type plasminogen activator (uPA)
- Plasminogen activator inhibitor (PAI)
- HER2 (see section on “Treatment”)

Raised concentrations in tumour tissue reliably demonstrate increased aggressiveness of the tumour. In women with early stage breast cancer, uPA and PAI-1 may be very useful in planning treatment and estimating the prognosis.

TNM classification

- **T** = Tumour, **N** = Nodes (regional lymph nodes), **M** = Metastases
- Malignant tumours are classified in groups according to their spread. By ranking index numbers, the individual stages of spread can be described more precisely.
- An early stage carcinoma without metastases is therefore designated T1 N0 M0.
- With **CARCINOMA IN SITU** (Tis), the tumour is still locally demarcated and cannot give rise to metastases. It remains in this stage, sometimes for years. If the carcinoma is diagnosed and surgically removed at this early stage, complete cure may be assumed.

– With increasing growth, the tumour breaks through the wall of a gland lobule or a milk duct and gains access to the blood or lymphatic system (T1 to T4 tumour). At this stage there are often already metastases.

Grading

- The grade of tumour differentiation is evaluated on the basis of criteria such as the similarities between the tumour cells and cells of the organ from which the tumour originates, and the rate of cell division within the tumour.
- The grades are designated G1 to G4, whereby a G1 tumour is well differentiated with a better prognosis and a G4 tumour is poorly differentiated with a less favourable prognosis.

Risk assessment: Breast cancer

DOCUMENTATION FOR RISK ASSESSMENT

The course of the disease must be fully documented. This includes the following information:

- Operation/pathology report
- Staging of the tumour (TNM classification) and grading
- Date of end of treatment
- Time since full remission (complete disappearance of the tumour)
- Last follow-up examination (within 12 months of the application)

Oncological after-care includes regular check-ups. The interval between examinations depends on the stage and grade of the tumour, and the time elapsed since the end of treatment. The interval may be several months to years, being shorter at the start and becoming longer as time goes by.

Possible late sequelae of the disease and of treatment must be taken into consideration. Irradiation may cause fibrosis of the lungs and there is a possible risk of leukaemia from high-dose chemotherapy.

An offer of insurance can only be made if there is full remission at the time of application.

LIFE

- Allocation to a tumour risk class is based on the tumour stage and grade. Risk class and time since the end of treatment decide whether an application must be postponed or whether immediate acceptance with a temporary extra premium is possible.
- The temporary extra premium reflects the residual risk of recurrence for a given risk class. The level and duration of this loading in turn depend on the tumour risk class and the time elapsed since the end of treatment.

- With carcinoma in situ, immediate acceptance is possible. Acceptance is made with a constant low extramortality to allow for unexpected recurrence even many years later and an increased risk of a second tumour.
- With advanced tumour stages or additional risk factors (e.g. fibrocystic mastopathy in the remaining breast) the risk is not accepted.

DISABILITY

- Allocation is analogous to that for life insurance.
- Difference: exclusion clause instead of temporary extra premium.
- Acceptance without exclusion clause is possible in very early tumour stages if the end of treatment is already some years past.
- Apart from the sequelae directly related to treatment (see above), malignant disease may also result in further disorders such as psychological problems which – as long as they are not covered by the exclusion clause – must be given special consideration.

HEALTH

- A diagnosis of breast cancer leads to rejection in all cases.
- In the case of carcinoma in situ, acceptance with a low extra premium may be made after a one-year postponement, as long as there are no additional risk factors such as mastopathy in the remaining breast.

For details of risk assessment, please refer to our manuals MIRA and NORMRISK Health.



Screening mammography for detecting breast cancer in its earliest stages.



Invasive breast cancer.

Infectious diseases – The underestimated danger

According to estimates by the World Health Organization (WHO), more than 17 million people are still dying each year from infection – representing one quarter of all deaths. Despite the enormous advances of modern medicine, lasting success in the fight against infectious diseases is still lacking. On the contrary, more than 30 previously unknown pathogenic organisms were discovered between 1973 and 2003 and there was a resurgence of many known pathogens in even more dangerous forms.

ADAPTABLE MICRO-ORGANISMS

There are various reasons why new infections emerge and old ones become more virulent. Complex relationships between biological, cultural and environmental factors affect changes in micro-organisms. Most pathogens, in particular viruses and bacteria, are very flexible and able to adapt readily to new environmental conditions. Modern medical technology itself even assists them to do this: blood transfusions, transplantations and invasive surgical procedures offer certain pathogens ideal modes of transmission. And the use of antibiotics may lead to the development of resistant, difficult-to-treat pathogens.

In industrialised nations there is an increasing proportion of older and chronically ill people who are no longer physically in the position to resist infection, thus encouraging the spread of microbes. In developing countries, poverty favours the spread of microbes. The poor often live in catastrophic hygienic conditions; they have no protective vaccines, are undernourished and receive poor medical care or none at all. Infectious diseases are therefore the main cause of death in developing countries.

Global climate changes contribute to the development of new infectious diseases. Climatic changes affect the multiplication and movement of pathogens and vectors (those responsible for the transmission of disease, e.g. mosquitoes, ticks, fleas, bugs). Pathogens which were previously only endemic in the tropics are now increasingly spreading to temperate zones. One example can be found in the **WEST NILE VIRUS** in the USA.

A further cause: in many regions, people and animals live in close proximity. Dangerous pathogens can thus pass from animals to people, as was probably the case with **SEVERE ACUTE RESPIRATORY SYNDROME (SARS)**. Cross-border travel and cargo transport also favour the rapid worldwide spread of pathogens and vectors. Refugee flows from crisis zones reinforce this tendency. Suddenly, dangerous infections such as tuberculosis and diphtheria, which had previously been under control, are once more on the increase in industrialised countries.



Effects on the insurance industry

The examples of SARS and HIV have shown that the global spread of new pathogenic organisms can be very rapid. Munich Re recognises the increasing significance of infectious diseases for the insurance industry and is therefore monitoring outbreaks of infections worldwide and analysing their effects on the industry. These may be extremely wide-ranging and affect not only business operations but also individual insurance products.

The example of SARS

What consequences has SARS had on the acceptance policy in the various classes of insurance? Munich Re has received many queries about this over the past few months. In order to be able to give their clients an optimal reply, they founded an inter-disciplinary group, the "SARS Task Force", at the start of the epidemic. In this way, clients can be given up-to date advice. For example, life insurers were informed of the Munich Re assessments in [MIRA >> WHAT'S NEW](#).

Despite the approximately 8,000 infected persons and 700 deaths, SARS remains a rare disease which has to date claimed fewer victims than the annual influenza epidemic. Based on the latest scientific knowledge, Munich Re does not consider SARS to be a very high risk at the moment for life and health insurers' purposes. Treatment costs for SARS do not exceed those for many other very widespread diseases. Intensive monitoring is, however, still necessary as it cannot be forecast how SARS will develop and spread.

SARS (SEVERE ACUTE RESPIRATORY SYNDROME)

In November 2002, in the Guangdong province of southern China, the first people fell ill with SARS, a hitherto unknown severe disease of the lungs. The worldwide spread of SARS began in Hong Kong, after one sufferer infected other guests staying in the same hotel, and these spread the virus on the snowball principle. SARS is caused by a new variant of a corona virus. Known corona viruses had previously been considered harmless to humans.

Many scientists suspect that this dangerous disease originated in animals. SARS-like viruses have been demonstrated in the blood of some exotic species of animals, sold as culinary delicacies in Chinese markets.

SARS is an example that, in this age of modern transport, new pathogenic organisms can spread across the world in a very short time. On the other hand, SARS has shown that international cooperation between scientists and politicians can combat such infectious diseases very rapidly and effectively. In addition, it demonstrated that age-old strategies for combating epidemics (such as quarantine and isolation of those infected or suspected of being infected) are still successful in the 21st century.

Even if it is presently quiet on the SARS front, WHO researchers warn against premature celebration. The virus is by no means vanished. At the latest when the weather becomes cooler in China, the infection may return.

SYMPTOMS

- After 2 to 15 days, the typical onset of SARS manifests as non-specific flu-like symptoms and may easily be misdiagnosed as a simple cold.
- Some of those affected develop a severe lung infection after a few days, with high fever and difficulties breathing, which may rapidly lead to death through respiratory failure.
- In Hong Kong every second infected person over the age of 60 years died, although the figure was less than one per cent in the under-25s.

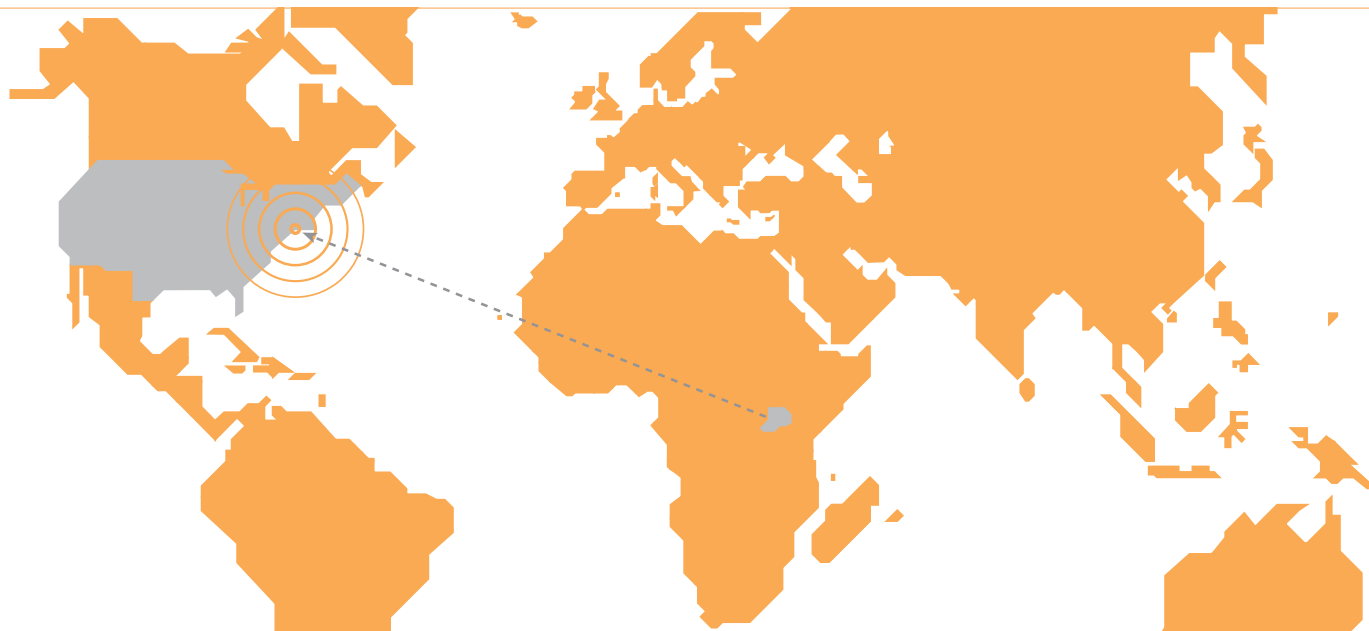
TRANSMISSION

According to current knowledge, SARS is mainly transmitted by droplets spread through close contact with infected persons, who shed more viruses and are more infectious at the start of the illness.

Faecal-oral transmission is also possible, since the virus has been demonstrated in the stools of infected persons.

TREATMENT/VACCINATIONS

There is no specific treatment. Vaccination is not possible.



WEST NILE VIRUS INFECTIONS IN THE USA

The West Nile virus (WNV) is by no means an unknown pathogen; what is new is that it has appeared in the USA. WNV gets its name from its original geographical distribution – the West Nile province in Uganda. There it infects indigenous animals, mainly birds and horses, but also humans. Starting in New York, where the pathogen first appeared in 1999, it has in the meantime found optimal living conditions throughout the whole of the USA. These include the many birds which act as hosts and swarms of mosquitoes which transmit the virus from bird to bird and from bird to person.

It is not known whether the West Nile virus was brought to North America by infected birds or mosquitoes.

The main vector is the *Culex pipiens* mosquito, which prefers mild winters and hot summers and is comfortable in an urban environment, i.e. close to people. Scientists consider that, due to global warming, the West Nile virus will also find favourable conditions in the temperate zones of the earth. Because of the uncommonly warm winter of 1999/2000, many *Culex* mosquitoes survived in the North-East USA, and this in turn promoted the spread of the virus.

SYMPTOMS

The West Nile virus affects the central nervous system. The clinical picture varies greatly.

- The majority of those infected have no symptoms.
- About 20% have flu-like symptoms within 3 to 14 days of being bitten by an infected mosquito.

- About one in 150 infected people goes on to develop a severe illness with meningitis (infection of the membranes covering the brain) and encephalitis (infection of the brain), which may be fatal or leave residual health problems.
- The risk of dying from West Nile fever correlated positively with age (highest risk in the over-70s).

TRANSMISSION

Infected mosquitoes

Mosquitoes are vectors of WNV. They pick up the virus by sucking the blood of infected birds and can then pass on the WNV by biting humans or animals, e.g. horses.

Transfusions, transplantations, mother-child

In very rare cases, WNV has been transmitted through blood transfusions, organ transplants or from mother to child during pregnancy or breast-feeding.

TREATMENT/VACCINATION

As with most virus infections, there is no specific treatment. At present, there is no vaccination available, although one is being developed.

We wish to thank Dr. Robert W. Lund, Vice President and Medical Director of Munich American Reassurance Company for contributing this article.

A CHANCE FINDING

A chance finding – Mitral valve prolapse

The idea was just to have a routine check-up before a diving holiday in Egypt. Listening through his stethoscope, however, the doctor heard a heart murmur. Mrs. P. had never had any symptoms and was now troubled. She was referred to a heart specialist to find out the cause of this murmur. After echocardiography, the cardiologist told her that the heart murmur was due to a harmless **MITRAL VALVE PROLAPSE (MVP)**. In this or similar ways, mitral valve prolapse is often discovered by chance. But is it always a harmless coincidental finding, or can it have more sinister implications?

WHEN THE HEART RUMBLES ...

Mitral valve prolapse is one of the most common valve anomalies in the western world, being found in 3–4% of the adult population. Women are much more commonly affected than men, and there is an increased familial risk. In more than 90% of cases, the finding is harmless and not associated with illness. Those affected are completely symptom-free and remain so for the rest of their lives. In a small group, however, mitral valve prolapse may lead to serious complications.

CAUSES

In young people, mitral valve prolapse is frequently due to increased elasticity of the valvular structure, the tendinous cords (chordae tendinae) or the valve itself, as the tissue is still very soft. Congenital mitral valve prolapse may come to light when the connective tissue becomes diseased. The valve is then greatly thickened and of a soft, sometimes gelatinous consistency, and may have deposits of connective tissue material. With age, there is a danger that the rupture of a tendinous cord, due to inflammation or calcification, may cause mitral valve prolapse. Damage to the papillary muscle following a heart attack may also give rise to the condition.

MITRAL VALVE PROLAPSE SYNDROME

Only when symptoms appear is it referred to as **MITRAL VALVE PROLAPSE SYNDROME**. There are several different symptoms: they are primarily disturbances of the heart rhythm, although reduced performance, anxiety states, shortness of breath and chest pains also occur. Women suffer from such symptoms much more often than men. It is not clear whether the symptoms are always due to the mitral valve prolapse or are sometimes of a psychosomatic nature, but affected persons may suffer so severely that they are unable to work.

COMPLICATIONS

Mitral regurgitation

In rare cases, mitral valve prolapse causes a leaky mitral valve. Depending on the severity, this may in turn lead to chronic damage of the heart which progresses at a varying rate. Sometimes valve reconstruction or replacement may be necessary.

Disturbances of heart rhythm (arrhythmias)

If there is a high degree of mitral regurgitation, life-threatening arrhythmias may develop. In contrast, the arrhythmias that occur in mitral valve prolapse without mitral regurgitation are usually completely harmless. As a rule, they can be controlled by medication (beta blockers).

Endocarditis

The risk of life-threatening bacterial infection of the mitral valve increases in mitral valve prolapse with mitral regurgitation. This may be prevented by prophylactic antibiotic administration (e.g. before dental procedures) – endocarditis prophylaxis.

DIAGNOSIS

Clinical examination

Frequently asthenic build, sometimes associated with skeletal abnormalities (e.g. scoliosis, funnel chest), tendency to underweight and low blood pressure.

Auscultation

One or more high-frequency clicks in the contraction phase of the heart (systole). In approx. 25% of cases, MVP is "silent" on auscultation.

ECG at rest

Usually nil of note

Exercise ECG

Sometimes false positive findings which may mimic coronary heart disease

Colour duplex echocardiography

The most sensitive method of demonstrating a mitral valve prolapse and associated mitral regurgitation. The prolapse is directly visualised by ultrasound scan. In addition, it can be assessed whether mitral regurgitation has already caused cardiac damage.

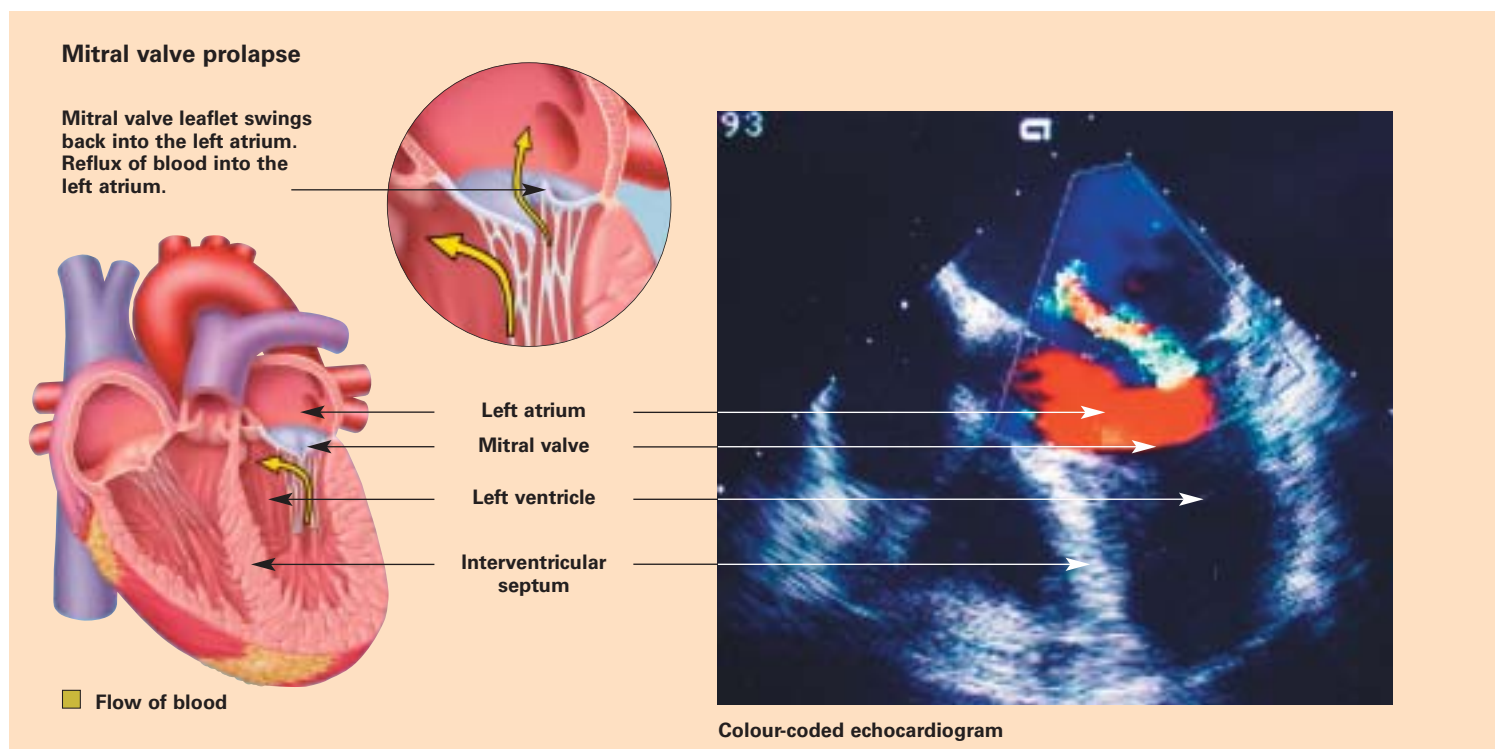
PROGNOSIS

The prognosis depends on the severity of the mitral regurgitation and relevant concomitant disease, i.e. coronary heart disease. A very few of those affected suffer sudden cardiac death.

Risk factors for sudden cardiac death

- High degree of mitral regurgitation with cardiac enlargement
- High degree of mitral valve deformity
- Severe cardiac arrhythmias
- Concomitant disease, e.g. left ventricular failure, due to long-term arterial hypertension, coronary heart disease

Symptom-free patients without severe cardiac arrhythmias and without significant mitral regurgitation have an average life expectancy. They require no treatment. Monitoring is worthwhile, however, since some of them may develop mitral regurgitation with the passage of time.



Risk assessment: Mitral valve prolapse

DOCUMENTATION FOR RISK ASSESSMENT

- Specialist cardiological report of the abnormality is required
- Recent echocardiography

FAVOURABLE FACTORS FOR THE COURSE OF THE DISEASE

- No symptoms
- Chance finding on echocardiography
- No murmur

UNFAVOURABLE FACTORS FOR THE COURSE OF THE DISEASE

- Symptoms of mitral regurgitation
- Atrial fibrillation
- Marked symptoms (severe cardiac arrhythmias, angina pectoris, shortness of breath, poor physical performance, etc.)

LIFE

- Normal acceptance with pure mitral valve prolapse and no symptoms
- Acceptance with slight loading on premium rate is also possible with more severe symptoms, for example, shortness of breath, angina pectoris or decreasing physical abilities. However, the cardiologist must exclude other causes relevant to risk (e.g. coronary heart disease).

- In the case of mitral valve prolapse with mitral regurgitation, the extramortality correlates with the severity of the mitral regurgitation and the symptoms.

DISABILITY

- Decline if there are marked symptoms, irrespective of whether or not there is mitral regurgitation; the severity of the symptoms often does not correlate with the degree of valve damage. Despite an excellent prognosis, the ability to work may be substantially reduced.

- In the case of mitral valve prolapse with mitral regurgitation, the degree of the mitral regurgitation and the symptoms determine the extent of the extramorbidity.

HEALTH

- Acceptance with low to moderate extra premium for symptom-free applicants with mitral valve prolapse and no mitral regurgitation; no normal acceptance since regular echocardiography examinations are required in the course of the disease and mitral regurgitation may develop.
- Decline if there are marked symptoms, even if there is no mitral regurgitation.
- Decline in the case of mitral valve prolapse with mitral regurgitation; acceptance in individual cases may be possible, with high extra premium.

The mitral valve is the one between the left atrium and the left ventricle of the heart. It consists of two leaflets which allow the blood to flow in one direction only. Tendinous cords (chordae tendinae) hold these leaflets in place and prevent them from swinging back into the left atrium during contraction of the left ventricle as it pumps the blood forward. These cords themselves originate from elongated muscles – the papillary muscles. These regulate the length of the cords during the various pumping phases of the heart.

In mitral valve prolapse there is a discrepancy between the size of the mitral valve apparatus and the left ventricle. Over-sized mitral valve leaflets and elongated cords mean that part of the mitral valve leaflet billows, rather like a hammock, into the atrium during ventricular contraction.

The colour-coded echocardiogram shows the reflux of blood from the left ventricle into the left atrium. The mitral insufficiency is clearly recognisable from the turbulent blood flow (red).

The interventricular septum is the muscular wall separating the right and left ventricles.

DIAGNOSTICS

Early diagnosis of colorectal cancer

“You feel great, you have a healthy appetite, you are just fifty years old ... then you have the typical symptoms of colorectal cancer.”

The opening words of an awareness campaign run by the American Cancer Society are aimed to make you think. Worldwide, more than 500,000 people develop colorectal cancer each year. And some 250,000 die, because in most cases **BOWEL CANCER (COLORECTAL CARCINOMA)** is diagnosed too late. There are no early symptoms. Weight loss, pain, irregular stools and anaemia are late symptoms of advanced tumours with very poor chances of cure. Early diagnosis is therefore of prime importance.

WHAT CAUSES COLORECTAL CANCER?

About 90% of disease can be traced back to benign intestinal **POLYPS** that develop from genetically altered cells of the intestinal mucosa. Further alterations in the genetic material of these cells cause the benign polyps to undergo malignant change into colorectal cancer. The risk of this transformation increases with the size of the polyps and depends on their fine tissue characteristics. Progression from polyp to carcinoma takes about ten years. Enough time, therefore, to discover the harmless precursors and remove them.

WHO SUFFERS FROM COLORECTAL CANCER?

Some 6–7% of the population in Europe and the USA suffer from colorectal cancer during the course of their lives. The risk of being affected increases sharply from the age of 50 years. About 75% of cases arise spontaneously while the other 25% have a familial incidence. If a family member has colorectal cancer before his/her 60th birthday, the risk in first degree relatives increases to about 30%.

HEREDITARY NON-POLYPOSIS COLORECTAL CARCINOMA

(HNPCC) accounts for some 5% of all cases of colorectal carcinoma. People who are predisposed to HNPCC do not just have a lifetime risk of 80% but also frequently suffer from malignant tumours of other organs, e.g. the uterus (womb), ovaries, urinary tract and pancreas. Colorectal cancer appears in these people by about 45 years of age.

The group with the highest lifetime risk consists of those with a predisposition for **FAMILIAL ADENOMATOUS POLYPOSIS (FAP)**, a condition associated with more than a hundred large intestinal polyps that frequently arise in childhood. The risk of colorectal cancer in FAP is 100%, with cancer appearing in the patient's twenties or thirties. FAP is often associated with malignant tumours arising in other organs, e.g. the stomach, liver and brain.

Analysis of the family tree provides important evidence for the existence of a genetic form of colorectal cancer. Some important genetic mutations (which in these cases are passed down within the family) are already known and can be diagnosed in family members with the aid of molecular genetic tests.

FURTHER RISK FACTORS

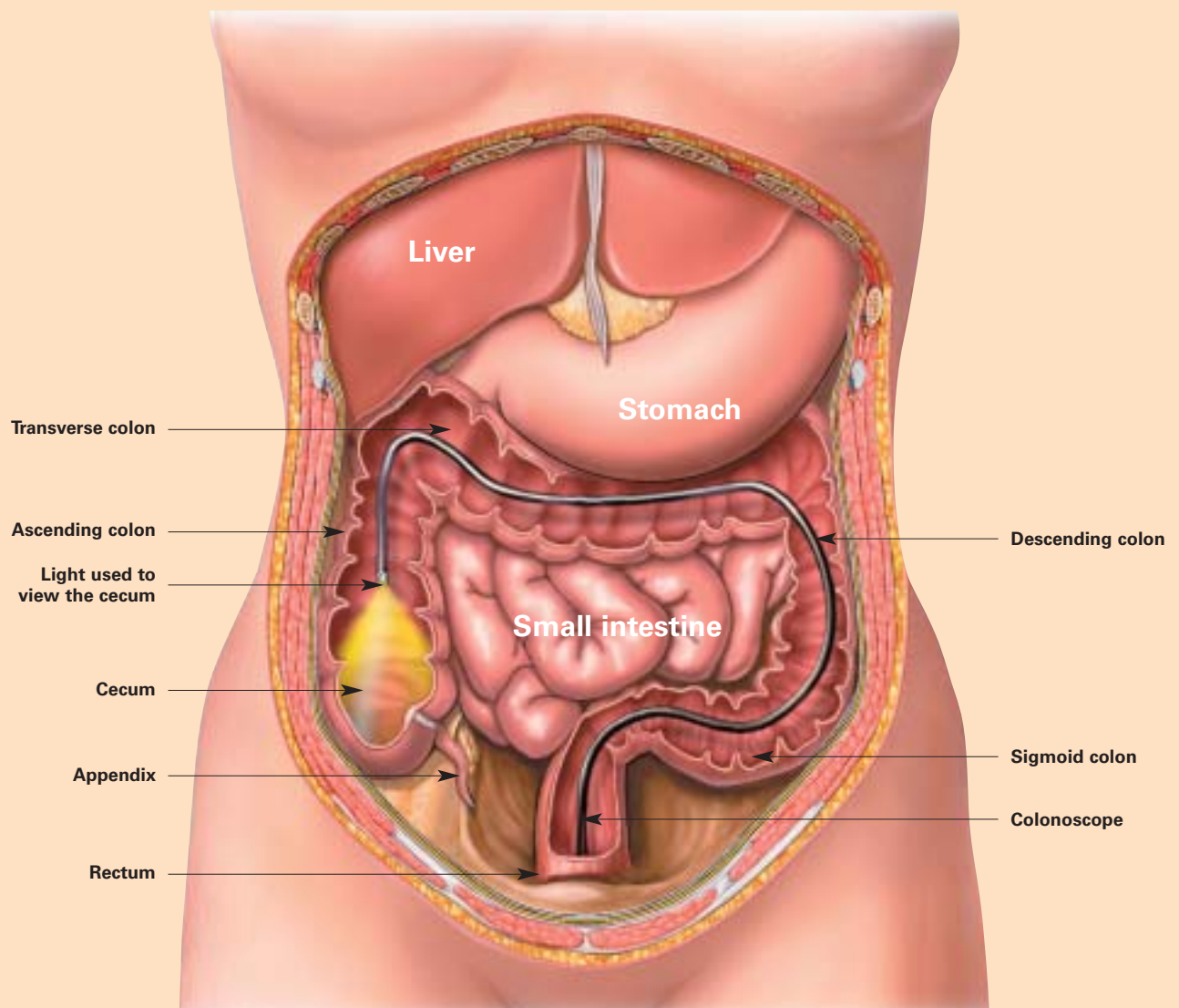
- Chronic inflammatory bowel disease (Crohn's disease, ulcerative colitis) especially when the entire length of the colon is involved
- Colonic adenomas (most colonic polyps are adenomas)
- Dietary factors: meat and fat-rich diets, alcohol consumption
- Obesity, lack of exercise, smoking

Possibilities for prophylaxis:

- Diet with plenty of fruit and vegetables
- Regular physical exercise
- Fibre-rich diet (disputed)

COLORECTAL CANCER SCREENING

The aim of all screening tests is to identify pre-cancerous conditions and early stages of cancer. Small intestinal polyps can usually be removed during **COLONOSCOPY** with a diathermy snare. This procedure is called **POLYPECTOMY**. Early carcinomas are usually removed surgically. With an average risk, general screening should start at the age of 50 years. In groups with increased individual or familial risk, investigations for colorectal cancer must start correspondingly earlier, sometimes even in childhood.

The principle of colonoscopy

THE HAEMOCCULT™ TEST

Evidence of bleeding adenomas and carcinomas of the gastrointestinal tract may be found with the aid of a regular **FAECAL OCCULT BLOOD TEST**, e.g. Haemoccult™. The test is relatively insensitive since not more than two thirds of the adenomas and carcinomas are bleeding at the time of investigation. And several factors may interfere with the test results. A true diagnosis of colorectal cancer is made in only about 10% of patients with a positive FOB test. Even so, the Haemoccult™ test is of great importance. Studies have shown that the risk of dying from colorectal cancer can be reduced through the widespread use of this test in the general population.

The reliability of a **DNA STOOL TEST** is presently being studied in large-scale trials in the USA. This test firstly recognises cancer cells in a stool specimen and secondly demonstrates changes in the genetic material of intestinal cells which are known to be involved in the development of colorectal cancer.

PROGNOSIS

The long-term prognosis in colorectal cancer depends on the nature and size of the tumour. With localised tumours, more than 90% of patients are alive five years later. With more advanced carcinomas and distant metastases the five-year survival rate falls to less than 10%. More than half of all cases of colorectal cancer are first diagnosed at an advanced stage. Early recognition of colorectal cancer is therefore extremely important. A prompt diagnosis saves the patients and their families much suffering and the health services high costs.



Polypectomy

ENDOSCOPY OF THE LARGE INTESTINE (COLONOSCOPY)

The best method for the early diagnosis of colorectal cancer is a full endoscopy of the large intestine (colonoscopy). If the Haemoccult™ test is positive, colonoscopy must be performed. A laxative is given to clean out the bowels before the procedure, so that the physician can use the colonoscope to examine the mucosa along the full length of the large intestine. If necessary, biopsies of suspicious areas can be taken with special instruments, and any polyps removed. In this way, even the smallest carcinoma and intestinal polyp can be diagnosed with a high degree of certainty.

VIRTUAL COLONOSCOPY

Virtual colonoscopy is a new procedure in which state-of-the-art sectional imaging (computed tomography or magnetic resonance imaging) delivers two-dimensional images from the body. A computer compiles a virtual three-dimensional image. The intestine and surrounding organs can then be assessed on the monitor.

Even with this technique, the patient is not spared the necessity of cleaning out the bowel. The intestines are filled with either air or fluid for the investigation. The advantage of virtual colonoscopy is that it is a short and relatively comfortable investigation, but it has the disadvantages that polyps measuring less than 0.5 cm cannot be diagnosed with any certainty, and biopsy is not possible.

If polyps are demonstrated, endoscopic colonoscopy is required so that the doctor can perform biopsies or remove the affected areas. This method is therefore no real alternative to colonoscopy at present.

Therapy

Catheter ablation with Wolff-Parkinson-White syndrome Page 15

A CASE IN PRACTICE



CASE REPORT

36-year-old telecommunications fitter

Requested cover: Life and additional disability benefits

Diagnosis

- Radiofrequency catheter ablation carried out two years previously for frequent tachycardia in WPW syndrome, associated with dizziness but no collapse or loss of consciousness
- Symptom-free since radiofrequency catheter ablation
- Known arterial hypertension for three years, WHO grade 1, well controlled on metoprolol
- Hay fever, May to August

Current findings

- Echocardiography, ECG at rest and on exercise, 24-hour blood pressure monitoring and 24-hour ambulatory ECG: Nil of note

Electrophysiological investigation

- Confirmation of ventricular pre-excitation with reproducible induction of an atrioventricular re-entry tachycardia via a left lateral and a left anterolateral accessory bundle
- Successful catheter ablation of both conduction pathways
- No subsequent induction of the previous reproducible trigger tachycardia



OUR DECISION:

Life: Borderline standard

Additional disability benefits: +25%

Reasons: Arterial hypertension, allergy



COMMENTS

WOLFF-PARKINSON-WHITE SYNDROME (WPW SYNDROME)

In Wolf-Parkinson-White syndrome, the heart suddenly races with a pulse rate of 180 beats/minute or more. This tachycardia may cause dizziness or loss of consciousness, and stops just as abruptly as it started. In very rare cases, WPW syndrome may lead to sudden cardiac death, although in most cases the prognosis is good.

The tachycardia is triggered by accessory conduction pathways (also known as AV connections), usually present from birth, which prematurely conduct the electric signals from the atria to the ventricles (pre-excitation). This creates an electrical short-circuit between the atria and the ventricles. As a rule, the heart is otherwise completely healthy.

ELECTROPHYSIOLOGICAL INVESTIGATIONS

Electrophysiological investigations clarify the rhythm disturbance. The cardiologist gains important information on the nature and extent of the arrhythmia and the potential danger to the patient. If the arrhythmia occurs only sporadically, the cardiologist will attempt to trigger it artificially through electrical or drug stimulation and thus localise the site of the disturbance ("hot spot"). In the cardiac laboratory, special catheters are introduced into the heart from the veins. Accessory pathways between the atria and ventricles can be localised to within a millimetre, as was done for our applicant.

RADIOFREQUENCY CATHETER ABLATION

Radiofrequency catheter ablation allows the treatment of specific cardiac arrhythmias with a **RADIOFREQUENCY CURRENT**. The heart muscle tissue responsible for the conduction disturbance is destroyed by heat. This treatment is extremely suitable for cardiac arrhythmias for which the site of origin can be localised accurately. This is the case, for example, in pre-excitation syndromes with accessory conduction pathways.

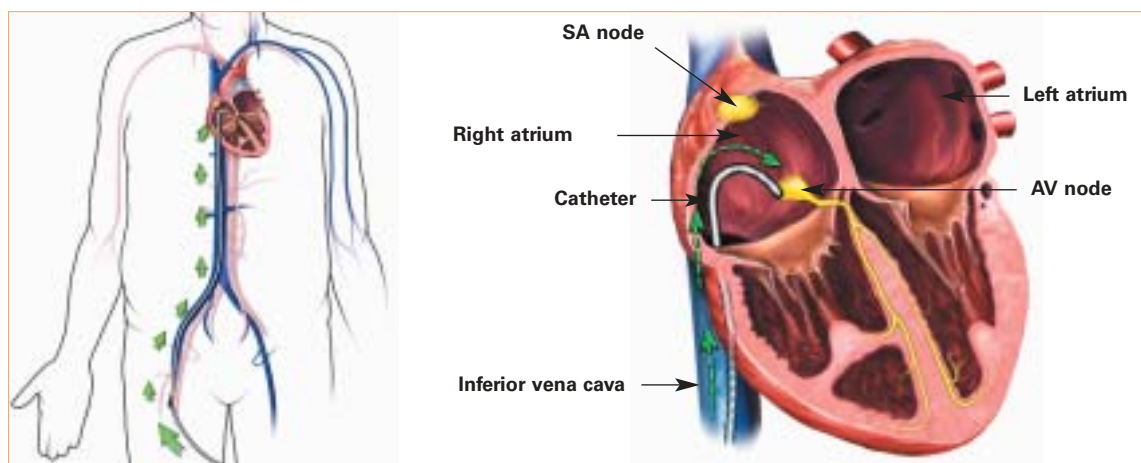
In this procedure, the doctor introduces a special catheter under X-ray guidance. The catheter is usually placed in the heart through a vein or artery near the accessory pathway(s). Radiofrequency current heats the catheter tip to about 70°C and cauterises the superfluous conduction pathway. This breaks the circuit causing the rhythm disturbance. The procedure is neither painful nor affects the function of the heart. Radiofrequency catheter ablation is successful in about 95% of cases; in the other cases it can be repeated.

COMPLICATIONS

Radiofrequency catheter ablation has now become an established and safe procedure. However, severe acute complications do occur in 0.1–1.0% of cases. Procedure-related deaths and complications leading to permanent disability are very rare. The risk of severe complications depends mainly upon the underlying heart disease.

PROGNOSIS FOLLOWING RADIOFREQUENCY CATHETER ABLATION

The prognosis depends on the underlying disease. In patients with healthy hearts, morbidity and mortality are not increased after successful, complication-free radiofrequency catheter ablation.



The catheter for the radiofrequency ablation is placed in the right atrium.

Risk assessment: Radiofrequency catheter ablation in WPW syndrome

DOCUMENTATION FOR RISK ASSESSMENT

- Detailed documentation of the course of the disease to date
- Report on the radiofrequency catheter ablation
- Specialist cardiology follow-up examinations after the procedure

FAVOURABLE FACTORS FOR THE COURSE OF THE DISEASE

- Symptom-free after the procedure
- No complications during the procedure
- Normal heart function

UNFAVOURABLE FACTORS FOR THE COURSE OF THE DISEASE

- Unsuccessful procedure and marked symptoms (exhaustion, collapse, syncope, tachycardia lasting several hours)
- Complications during the procedure which have led to lasting damage
- Impaired cardiac function (e.g. with hypertension or coronary heart disease)

LIFE

- Normal rates with healthy heart and successful catheter ablation if symptom-free for at least one year
- With unsuccessful procedures, the extramortality correlates with the underlying heart disease as well as the frequency, duration, intensity and time of the last symptoms.

DISABILITY

- Postpone for one year after the procedure
- Normal rates for persons with healthy hearts if they remain symptom-free one year after the procedure
- With unsuccessful procedures, the morbidity correlates with the underlying heart disease as well as the frequency, duration, intensity and the time of the last symptoms. Since radiofrequency catheter ablation is usually only performed when there are marked symptoms, acceptance for disability benefits after an unsuccessful procedure is only possible in the most rare cases.

HEALTH

- Same considerations apply as for disability
- Postpone for one year after the procedure
- For persons with healthy hearts, acceptance with a low extra premium is possible if they remain symptom-free for at least one year after the procedure

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