Scots cancer discovery

By Mark Stevenson

A MAJOR breakthrough in the battle against breast cancer has been uncovered by Scottish scientists.

The lives of thousands of women could be saved following a successful experiment to detect the illness earlier.

Surgeons from Dundee University found a malignant tumour remains cold when surrounding breast tissue is heated up to around 20°C.

The crucial insight means a specialist should find it much easier to determine if a lump is cancerous because of the varying temperatures.

It is hoped the breakthrough could lead to advances in understanding the disease and result in early detection of breast cancer.

Professor Dr. Jayant Vaidya, who carried out the experiment with four colleagues, said yesterday the development is "very exciting indeed".

He added: "Nothing like this has been done before. We heated up a specimen and used a high-resolution thermal imaging camera to take a picture. We found the tumour stayed cold whilst the rest of the tissue heated up.

"Then we did the same thing on another five samples and every single one had the same outcome."

"This could open up a lot of doors for breast cancer treatment and detection, hopefully saving the lives of women all around the world."

The scientists tested tumours from six women just one hour after they were removed during surgery at Dundee's Ninewells Hospital.

'Nothing like this has been done before'

Using a hot-air gun, similar to a hairdryer, they heated the tissue but on each occasion the tumour stayed cold.

The research has been hailed as vital in the understanding of breast cancer and could lead to new drugs being developed that will help treat the disease.

It is also hoped that eventually a probe could be inserted into the breast to warm up the area around any suspected tumour.

Using thermal imaging equipment the test could then tell doctors if the lump is cancerous or not, meaning some women could avoid needing a painful biopsy.

The medics involved are now set to be awarded a grant to carry out the research on a much larger scale. The project has even attracted interest from as far away as Australia with

'It could open a lot of doors for treatment'

cancer biologists there carefully monitoring its progress.

The original report, which has recently been published in the International Journal of Surgery, predicted that the technique could become crucial in understanding breast cancer.

It read: "This difference in thermal properties between cancerous and normal breast tissues could have wide implications.

"The difference in response to heat may be related to various factors such as the relative proportions of water, fatty fibrous or vascular tissue, or indeed malignant tissue, and understanding the role of these, and any other factors could lead to new insights.

"Thus thermal response may one day become a very useful prognostic or predictive parameter."

Charity groups yesterday welcomed the research, which could help cut down the number of people succumbing to the disease each year.

Maria Leadbeater, Clinical Nurse Specialist at Breast Cancer Care, said: "We know that early detection of breast cancer is vital, as it can lead to simpler and more effective treatment, which can save more lives.

"Although this is a very small study, the results are interesting and potentially encouraging, but more research is needed to ascertain whether this technique could play a part in breast cancer detection in the future."

Breast cancer is one of the biggest killers in the UK with someone being diagnosed with the disease every 12 minutes. In Scotland, nearly 4,000 people are diagnosed with the condition every year.
Scientists in Dundee applaud breast cancer breakthrough

SURGEONS HOPE DISCOVERY WILL ‘OPEN UP DOORS’ FOR TREATMENT AND DETECTION

Scientists in Dundee are pioneering a new method for the early detection of breast cancer, it was revealed yesterday.

A team of surgeons at Dundee University have found malignant tumours remain cold when surrounding breast tissue is heated to about 20°C.

It is hoped the discovery will make it easier for specialists to determine if a lump is cancerous while leading to advances in understanding of the disease.

The study tested tumours removed from six women an hour after they had undergone surgery at Ninewells Hospital in Dundee.

Each piece of tissue was treated with a hot-air gun, and on each occasion the tumour stayed cold.

Professor Dr. Jayant Vaidya, senior lecturer and consultant surgeon in the university’s department of surgery and molecular oncology, said the discovery was very exciting.

“Nothing like this has been done before,” he said. “We heated up a specimen and used a high-resolution thermal imaging camera to take a picture.”

“We found that the tumour stayed cold while the rest of the tissue heated up. The results were consistent across all six samples.”

“This could open up a lot of doors for breast-cancer treatment and detection, hopefully saving the lives of women all around the world.”

The scientists are hoping for a grant to allow the research to continue on a larger scale.

A report on the study, which was published in the International Journal of Surgery, predicts the technique could become crucial in understanding breast cancer.

Meanwhile, scientists at Aberdeen University have discovered a link between mouth cancer and the genes which break down alcohol, it was revealed yesterday.

A major international study found people’s risk of developing oral cancer was related to genes which regulate how fast or slowly alcohol was metabolised by the body.

Researchers spent five years studying hundreds of patients with cancers of the mouth, larynx and oesophagus at centres throughout Europe and central and South America. They also studied patients who were free of the disease.

The study focused on two genes involved in metabolising alcohol – a substance which is already known to be a risk factor for oral cancer.

The academics found those with a variant in the genes appeared to be less susceptible to the cancers because alcohol was broken down more quickly.

Dr Tatiana Macfarlane, senior lecturer at the University of Aberdeen’s department of general practice and primary care, said: “The study showed that your risk of getting oral cancers is linked to genetics as well as lifestyle.

“We found that, in particular, the risk depends on how fast your body metabolises alcohol.

“The results suggest that the faster you metabolise it, the lower your risk.

“These results provided the strongest evidence yet that alcohol consumption is

“Nothing like this has been done before.”

Dr. Macfarlane, in epidemiology at the university said: “At a time when we are concerned about the levels of alcohol consumption in the United Kingdom, these results demonstrate the public-health importance of measures to reduce consumption and prevent deaths at young ages from diseases, including oral cancers.”

The research is published in the Nature Genetics journal.
Dundee team find cancer clue in heat

A SMALL study at Ninewells Hospital in Dundee has prompted big hopes of a breakthrough in detecting breast cancer.

Surgeons used hot air to warm up samples removed from six patients during surgery for breast cancer in an experiment that has never been done before.

They discovered that the cancers warmed up much less than the surrounding normal breast tissue.

The hope is that “this new physical characteristic” can be exploited to detect breast cancer earlier and avoid the need for patients to undergo painful biopsies.

The Dundee discovery is causing interest around the world. But, in a paper published in the International Journal of Surgery, the Dundee University team point out that more investigation needs to be done.

They want to gain a better understanding of exactly what is happening and whether the technique can be applied to other solid tumours.

In their small study they found that the tumours stay cold when the surrounding tissue is heated up to around 20 degrees.

It means a cancer specialist can easily see if a lump is cancerous because of the different temperatures.

Mr Jayant Valdyas, senior lecturer and consultant surgeon in the department of surgery and molecular oncology at Dundee University, said the discovery is very exciting.

“He said, “Nothing like this has been done before,”

“We heated up a specimen and used a high resolution thermal imaging camera to take a picture.

“We found the tumour stayed cold whilst the rest of the tissue heated up. Then we did the same thing on another five samples and every single one had the same outcome.

“This could open up a lot of doors for breast cancer treatment and detection, hopefully saving the lives of women all around the world.”

The researchers hope a probe could be developed to insert into the breast and heat the area around the tumour, which could mean bypassing a painful biopsy for some women.

Charities have welcomed the report but said more research is needed.

Charity Breast Cancer Care said, “Although this is a very small study the results are interesting and potentially encouraging.

“But more research is needed to ascertain whether this technique could play a part in breast cancer detection in the future.”

Around 4000 people are diagnosed with breast cancer in Scotland every year.
Breakthrough in diagnosing cancer

A BREAKTHROUGH by Scottish scientists could lead to the earlier detection of breast cancer and help save lives, it was claimed yesterday.

Surgeons at Dundee University have found a way to quickly identify malignant tumours. They have discovered the tumours stay cold when the surrounding tissue is heated up.

It means a specialist can easily see if a lump is cancerous because of the different temperatures.

Professor Dr Jayant Vaidya of the university’s department of surgery and molecular oncology, said: “Nothing like this has been done before. We heated up a specimen and used a high-resolution thermal imaging camera to take a picture.

“We found the tumour stayed cold whilst the rest of the tissue heated up. Then we did the same thing on another five samples and every one had the same outcome.”

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The researchers hope a probe could be developed to insert into the breast and heat the area around the tumour, which could mean bypassing a painful biopsy.

Charities have welcomed the report. A spokeswoman for Breast Cancer Care said: “We know early detection of breast cancer is vital, as it can lead to simpler and more effective treatment which can save more lives.”
Indian makes breast cancer discovery
28 May 2006, 10:27 hrs IST, PTI

LONDON: A Goa-born surgeon researching and teaching at the Dundee University in Scotland has pioneered a new method for the early detection of breast cancer.

Jayant Vaidya, senior lecturer and consultant surgeon at the university, is a leading member of a team of surgeons that discovered that malignant tumours remain cold when surrounding breast tissue is heated to about 20 degrees Celsius.

Experts hope the discovery will make it easier for doctors to determine if a lump is cancerous, and also lead to advances in understanding of the disease.

A study conducted by the team tested tumours removed from six women an hour after they had undergone surgery at the Ninewells Hospital in Dundee.

Each piece of tissue was treated with a hot-air gun, and on each occasion the tumour stayed cold.

Terrorising the discovery as ‘very exciting’, Vaidya said: “Nothing like this has been done before. We heated up a specimen and used a high-resolution thermal imaging camera to take a picture. We found the tumour stayed cold while the rest of the tissue heated up. Then we did the same thing on another five samples and every single one had the same outcome.”

“This could open up a lot of doors for breast-cancer treatment and detection, hopefully saving the lives of women all around the world,” he said.

The team hopes that a probe could be developed to insert into the breast and heat the area around the tumour, which could mean bypassing a painful biopsy.

A report on the study, which was published in the International Journal of Surgery, predicts the technique could become crucial in understanding breast cancer.
Test opens new door on breast cancer

G.S. MUDUR

New Delhi, May 28: A spur-of-the-moment experiment by a Goa-educated doctor in Scot-
land has helped scientists discover a novel property of breast cancer tissues that might improve diagnosis and treatment of the disease.

Cancer surgeon Jayant Sharad Vaidya and his colleagues at the University of Dundee have found that when resected breast tissues are exposed to heat, malignant tumours within them remain cooler than normal tissues.

The temperatures of the tumours remained 12°C to 20°C below the temperatures of normal tissues, the scientists have reported in the International Journal of Surgery.

"The tumours respond differently to heat. Understanding why this happens may give us fresh clues about the nature of cancer itself," Vaidya told The Telegraph over the phone.

"The response of tumours to heat has never been studied until now. This observation opens a new door that may lead to better diagnosis and treatment," said Vaidya, who had studied at the Goa Medical College and the Tata Memori al Centre, Mumbai.

Standard methods of detecting breast cancer include physical examination, mammography and magnetic resonance imaging. Each of these uses a unique property that differentiates the tumour from the surrounding healthy tissues.

A physical exam looks for typical hard features of tumours. A mammography relies on X-rays, and magnetic resonance imaging is based on how tissues interact with magnetic fields.

"But none of them is perfect," Colin Purdie, a consultant pathologist and team member at Ninewells Hospital, Dundee, told The Telegraph. The different response to heat shown by the tumours suggests that doctors may be able to look for tumours using an entirely new property, Purdie said.

Vaidya said the experiment was the result of an almost impulsive decision to observe what happens when freshly-resected breast tissues are exposed to heat.

"We have a medical technology lab. They were testing a new thermal imaging instrument, and I had resected breast tissues. I wondered what would happen if I exposed it to a hot air gun," Vaidya said.

The scientists subsequently exposed six specimens of breast cancer tissue to heat and found that in every specimen the tumour warmed less than the surrounding healthy tissues.

The differential heat response of tumours might emerge a tool to help surgeons trying to remove tumours from breast tissues — a delicate process aimed at removing all the malignant cells, while conserving as much healthy breast tissue as possible.

"Identifying the margins of tumours is important," Purdie said.

But the doctors caution that their observations would need to be validated through a larger number of samples, and a method to apply this technique to living patients has yet to be developed.

Healthy tissues and tumours at normal temperatures show no difference when examined through a thermal imaging camera. They respond differently only when excess heat is applied.

In patients, doctors are unlikely to expose breast tissues to significant differences in temperatures. But sensitive thermal imaging equipment may be able to detect small differences in temperature when tissues are heated to just one or two degrees, Vaidya said.
Indian surgeon pioneers breast cancer detection

A Goa-born surgeon researching and teaching at the Dundee University in Scotland has pioneered a new method for the early detection of breast cancer.

Jayant Vaidya, senior lecturer and consultant surgeon at the university, is a leading member of a team of surgeons that discovered that malignant tumours remain cold when surrounding breast tissue is heated to about 20 degrees Celsius.

Experts hope the discovery will make it easier for doctors to determine if a lump is cancerous, and also lead to advances in understanding of the disease.

A study conducted by the team tested tumours removed from six women an hour after they had undergone surgery at the Ninewells Hospital in Dundee.

Each piece of tissue was treated with a heat-air gun, and on each occasion the tumour stayed cold.

Terming the discovery as 'very exciting', Vaidya said: "Nothing like this has been done before. We heated up a specimen and used a high-resolution thermal imaging camera to take a picture. We found the tumour stayed cold while the rest of the tissue heated up. Then we did the same thing on another five samples and every single one had the same outcome."

"This could open up a lot of doors for breast-cancer treatment and detection, hopefully saving the lives of women all around the world," he said.

The team hope that a probe could be developed to insert into the breast and heat the area around the tumour, which could mean bypassing a painful biopsy.

A report on the study, which was published in the International Journal of Surgery, predicts the technique could become crucial in understanding breast cancer.

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Indian surgeon leads breakthrough in breast cancer detection

PTI | May 28, 2008 | 10:07 IST

A Goa-born surgeon, researching and teaching at the Dundee University in Scotland, has pioneered a new method for the early detection of breast cancer.

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स्तनांचा कर्कशर्ग खूप लवकरच्या अवस्थेत ओकथणे शक्य

लंड, २७ ऑगस्ट / देश
स्तनांची कर्कशर्ग असावीता त्याच्या नूतन रूपाना परिवर्तन दुर्लक्षेषण म्हणून गोष्टीच्या स्वास्थ्यविशेषज्ञ डॉ. ज्योति वेदा यांच्या क्रियान्वयनानिमित्त १९८४ चौकाढ करण्यात आलेले म्हणजेच त्याच्याशी अनुभवात असेल.

गोष्टीच्या ज्योति वेदा यांच्या क्रियाविशेष तंद्रित

पदवी पैतृक व आते स्वेच्छेनिवेदी देंडी विवाहात्मक कर्कशर्गाच्या संदर्भात करण्यात आलेल्या गोष्टीच्या खूप अवस्थेत असावीता, त्याच प्रस्तुत असलेल्याने एक प्रमुख दल आहे. त्याच विवाहात्मक प्रश्नात त्याच्या विसेच्या काम करतात. कर्कशर्गाच्या यांच्यावर विवाहात्मक आवश्यकता नसेली नाही.-

कर्कशर्गाच्या अध्ययन केलं. त्यांनी सहजीतील तत्त्वात उत्तम उपलब्ध होते. त्यांनी २० अंदाजे सेक्सुअलिज्ड तपाळ्यात त्यांनी त्यांचा मात्र मात्र पहिले मुलीं हस्ताक्षरात. वेदा यांनी मार्गदर्शित केली, हा शरीर अविश्विकतात उपलब्ध म्हणजेच दायरपासून आलेला आहे.

आयुर्विज्ञानी रेल्वे शाखेच्या शिक्षांत म्हणजेच त्यांनी त्यांनी त्यांच्याशी म्हणजेच त्यांनी त्यांच्यासाठी अवश्य आहे. त्यांनी त्यांच्यासाठी अवश्य आहे. त्यांनी त्यांच्यासाठी अवश्य आहे. त्यांनी त्यांच्यासाठी अवश्य आहे.
भारतीय ने कैंसर की आसान पहचान बनाई

29 May 2008, 0132 hrs IST, पीटीवीई

लंदन: भारतीय डॉक्टर जयंत शरद वैद्य ने ब्रेस्ट कैंसर की शुरुआती पहचान के लिए एक नई प्रक्रिया को ईजाद किया है। यह प्रक्रिया दुनिया भर के लाखों कैंसर पीड़ितों के लिए काफी मददगार हो सकती है।

गोवा मेडिकल कॉलेज से 1988 में ब्रजुएशन करने वाले जयंत स्कॉटलैंड की दूतखी यूनिवर्सिटी में इस नई प्रक्रिया की खोज करने वाली टीम के प्रमुख सदस्य हैं। जयंत और उनके सहयोगी सर्जनों ने पाया है कि ब्रेस्ट टिस्सूज को 20 डिग्री सेल्सियस तक गर्म करने पर चार्ट ट्यूमर ठंडा बना रहता है। जयंत यूनिवर्सिटी में सीनियर लेक्चरर और सलाहकार सर्जन हैं। विशेषज्ञों का मानना है कि इस खोज के जरिए डॉक्टरों के लिए यह पता लगाना आसान होगा कि ब्रेस्ट की गांठ कैंसर युक्त है या नहीं।

स्टडी के दौरान छह महिलाओं के ब्रेस्ट से ट्यूमर को निकालने के एक घटे बाद यह टेस्ट किया गया। रिसर्चर्स ने टिस्सूज के हूर तुकड़े पर गर्म हुवा डाली और हूर बार पाया कि दूसरी टिस्सूज के गर्म होने पर भी ट्यूमर ठंडा ही बना रहता है। वैद्य कहते हैं कि यह अपनी तरह की पहली खोज है। हूर सैंपल को गर्म करने पर ट्यूमर बाला हिस्सा ठंडा ही रहता है, जबकि दूसरी टिस्सूज गर्म हो जाते हैं।

जयंत ने उम्मीद जताई कि इस खोज से ब्रेस्ट कैंसर की पहचान और नए ट्रीटमेंट्स के कई रास्ते खुल जाएंगे। रिसर्चर्स की टीम को यह भरोसा है कि इस ऐसा पेटर्स विकसित हो सकेगा, जिससे ब्रेस्ट में मौजूद ट्यूमर के आस-पास के क्षेत्र को गर्म किया जा सके। इससे बायोप्सी जैसी तकनीकी विकसित प्रक्रिया से बचा जा सकेगा।