

**IMPLANT FOCUS**



THIS MONTH, SIMON  
 ALLUM VISITS  
 MICHAEL NORTON - A  
 MAN WHO HAS MADE  
 IMPLANTOLOGY HIS  
 LIFE - TO DISCUSS THE  
 ASTRATECH SYSTEM



**Simon Allum BDS** graduated from Guy's Hospital in 1982. He is an experienced lecturer in the use and application of implants in private dental practice. He runs an implantology referral clinic in Darlington, County Durham

I recently took the opportunity to visit Michael Norton at work in his private practice at 98 Harley Street, where we discussed his unusual career with implants in dentistry, including his work with the AstraTech dental implant system.

Michael Norton is surely a household name to anyone in the UK involved in implantology. He has been closely involved with the AstraTech implant system since 1990 and is currently sole international clinical consultant for AstraTech (Molndal, Sweden). He is joint author and managing editor of the periodical *Dental Implant Summaries* (the official journal of the ADI), and his many publications include his book *Dental Implants - A Guide for the General Practitioner*. He has published numerous papers in refereed journals on the clinical and biomechanical aspects of dental implants, is a registered specialist in surgical dentistry, and a highly regarded international lecturer. Michael is the immediate past chairman of the Association of Dental Implantology (UK) 1999-2001.

For many, an address in Harley Street conveys the concept of quality for those who are prepared to pay the price. I have to say that for me, the location made the visit all the more interesting. I found the street looking affluent and bustling with activity as expected. Number 98 was a

Robert Adams' show home in its day, and the main feature as you enter via the heavy Georgian porch doors is the black and white cheque-tiled hallway leading to the impressive, almost spiral staircase ahead of you. The reception room off the main hall serves the various specialist medical suites in the building, and the communal downstairs waiting room seems akin to a National Trust period home complete with its neo-classical columns and baby grand piano in the corner.

Michael's own suite consists of two rooms on the second floor. There is a modest consultation room, leading through to a larger room, itself divided into surgery and office areas. The surgery area is dominated by the Castellini chair, while the office area holds

the reception desk on one side of the room, with Michael's own work desk opposite. Michael works solely with his nurse, Linda, who also doubles up as his receptionist. This works well because there is less of a turnover of patients than might be expected in a conventional dental practice. The main room is well lit with natural light from large Georgian windows, the ceiling featuring the original neoclassical stucco designs. Being at the back of the building, the whole of Michael's suite benefits from fabulous views over rooftops and roof gardens towards the Chinese embassy and the GPO tower.

Very few private practitioners have such an in-depth knowledge of the scientific literature behind implantology, as does Michael. He speaks with authority on the subject, and from a personal viewpoint, I found him easy and relaxed to talk with. The story of his personal career is fascinating and he obviously enjoyed relating it to me.

Having realised that there

**Figure 1: Nigel takes advantage of natural light to the surgery when selecting shades**





**Figure 2: 98 Harley Street. Michael's suite is located on the second floor of the building**

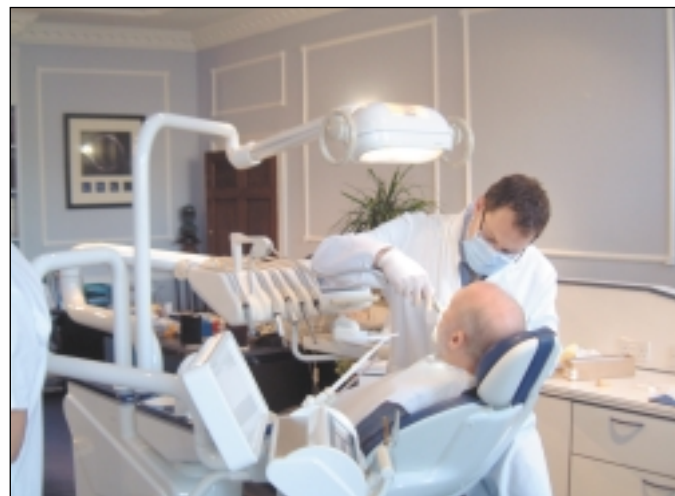
might be some potential in the future of dental implantology, Michael took an unpaid post on a research project at the Royal Free Hospital in 1989. That study had been arranged and sponsored by Astra. Impressed by Michael's knowledge of the literature at the time, Astra subsequently offered him a place with the company. By 1990, Michael was working on the pre-launch, the final development, the packaging and the promotional development of Astra's first commercial dental implant product. 'I was responsible for the selling of the first-ever Astra implant product in the world in 1990.'

Having had some experience of using Astra implants at my own clinic, I was keen to discover the main strengths of the system as Michael perceives them. For my own part, I have found the implant range simple to understand, the surgical kit simple and easy to set out, and the whole Astra concept to be rounded off with prosthetic components, which fit securely and reliably with the fixtures

themselves.

Astra's implant fixture range feature their own 'third generation' blasted surface - TiOblast. All fixtures have a user-friendly and favourably documented internal conical connection (the 'conical seal design'), most incorporating a 'double hexagon' anti-rotational device at the base of the internal cone for prosthetic flexibility. The 'microthread' design is now featured at the neck of all Astra's fixtures, and is said to maintain

**Figure 4: Michael at work on his father's lower incisor implant**



**Figure 3: Astra's new parallel implant range now featuring the coronal microthread design**

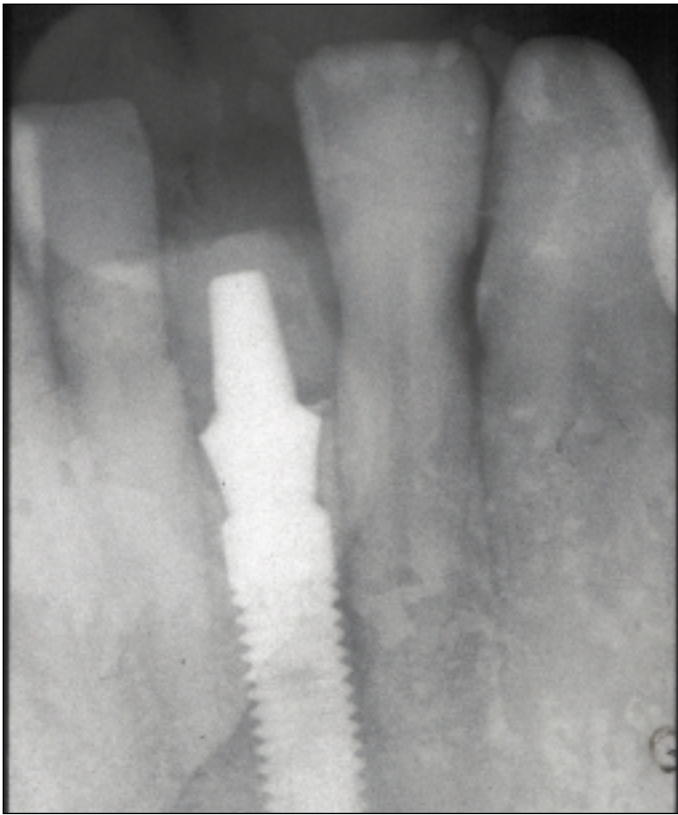
crestal bone height by generating more favourable stress distribution on loading. This particular feature was incorporated into Astra's entire fixture range during 2002. All of these features make the fixture look far-removed from a traditional external hex implant. But perhaps the most remarkable feature about the Astra's work-horse and flagship implant - the 4.5 ST fixture - is that it has not changed in any respect since its introduction in

January 1993.

Michael explains: 'The reason that the original ST implants were launched was because the standard parallel Astra implants didn't have an anti-rotational feature. People who wanted to use the system for single tooth replacement felt strongly that they needed anti-rotation. As it happens you don't (because the conical connection itself is rotationally stable), but in any event manufacturers do have to respond to market pressures. So in 1991 they developed the prototype 4.5 ST fixture that had an internal anti-rotational element at the base of the cone. That implant has not changed in any shape, form, surface or anything - it is *exactly* as it was when originally developed in 1991. There are probably no other implants out there on the market today that are identical in every respect of the same implant used ten years ago'.

In the current trend towards providing 'evidence based treatment' this is a powerful point to make. Michael

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**Figure 5: Radiograph of Geoffrey Norton's implant, with the direct abutment in situ**

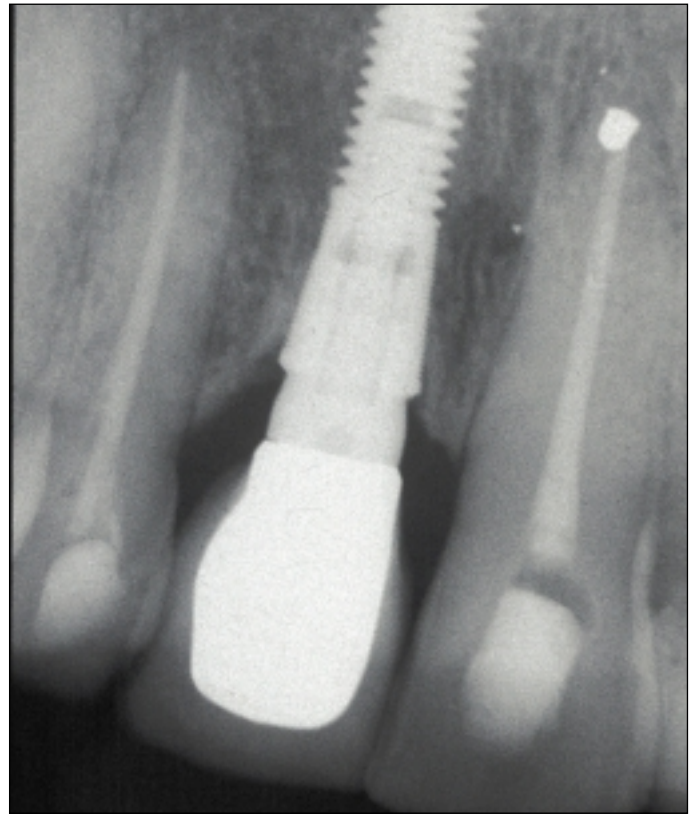
continues: 'When you think about current surface technology, you think about TiOblast, Osseotite, SLA and so on. If you were to ask colleagues how recent that technology is, most people would say that it's been a revolution in the last three to five years, prior to which we had TPS and HA and so on. But Astra launched its single tooth implant (ST) in January 1993 with the Microthread *and* the TiOblast.

'Astra customers have been using a third generation microtextured surface for ten years. The micro thread technology - which is the next big thing as far as Astra is concerned, again has also been around for ten years.'

I put it to Michael that considering how Branemark dominated the market at the time when Astra was launching the ST as a very different product, he must have been seen as a bit of a maverick.

'It was very difficult. You did get people having a go at you. I can tell you that ten years ago

no-one - but no one - was listening to what we were saying. I published some data with a colleague - Stig Hansson - who had a thesis. The rough surface was based on this thesis. Basically, it was ten years ahead of the game - it was too advanced. The implant fraternity was still totally convinced with machined titanium as opposed to HA or TPS. Basically we had to be patient and try our hardest to sell this concept. And that's why for both myself and for Astra, it's obviously a source of great pride that we were proven right. But nonetheless it was very difficult, and Astra has had to spend *ten years* repeating the same message. Then of course about five or six years ago, 3i started with their Osseotite implant. Then ITI ditched their TPS and came out with their SLA. All these surfaces are basically sharing one key feature - that is that they are microtextured in the one to ten micron range. By comparison, it's taken until the present day, eleven years on to



**Figure 6: Nine-year follow-up radiograph of a case restored by Michael using a 4.5 ST fixture**

see Nobel Biocare come out with a microtextured surface. Astra always knew it was right. I think that if you look back in the literature over the past ten years, the literature always indicated that roughened surfaces were better. There was a lot of misinformation put out and it wasn't system sensitive - it was general generic misinformation about roughened surfaces. Some earlier rough surfaces didn't get it right - TPS wasn't right, but the concept was right, the idea was right. Basically, with the microtextured TiO<sub>2</sub> blasted surface we were simply ten years ahead of the game. The beauty of that today is that we have ten years of data and documentation and most others have very little by comparison'.

The day that I visited Michael he was again making history - family history. Michael's father Geoffrey was his final patient of the day and Geoffrey recounted personal story to me: 'I was babysitting at Michael's house one evening and

he had left some rolls out for me to eat. I bit on one of them and there was an almighty crack - my lower front tooth had broken in half! When Michael arrived home I asked him - how well are you insured? When I showed him the problem, Michael was delighted, he said - 'my first family implant!'

Michael fitted a 3.5mm x 13mm fixture and immediately restored it with an acrylic temporary crown (Figures 1, 4, 5, 7, 8 9, 10). The abutment used in this instance was Astra's new solid titanium 'direct abutment' which has been launched in the UK.

Geoffrey (who still works as an accountant with offices nearby) was obviously pleased with this treatment modality. 'Although I'm his father, I have to say that the treatment was remarkably well done. I didn't have any pain at all throughout the whole of the session, which took about an hour. He took out the root, drilled it out and cleaned it up, stuck in the

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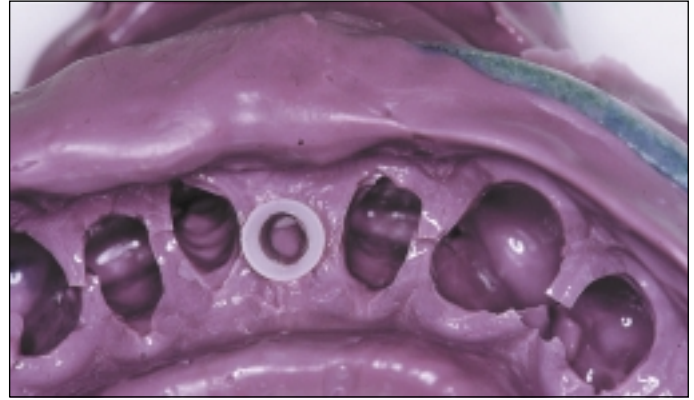
**Figure 7:** Michael used Astra's new Direct Abutment to restore his father's lower incisor. The components are supplied in kit form as shown here (Left to right: the solid titanium Direct Abutment, the plastic abutment carrier, the impression pick-up coping, laboratory analogue and two healing caps. The kit includes one healing cap for temporisation and another to be used for laboratory wax-up/burn-out

implant and made a temporary crown, which has been very, very good. I've been walking around with it for the last three months. I've been very careful not to bite on it as best I can. He put the fear of god in me that if I did bite on it I could disturb the implant. Three months has past, and I feel actually that I could not bother doing anything further with it. That's the story of my tooth.'

Michael is always kept busy - but not with routine dentistry - 'I haven't done a filling or root canal for at least ten years, and I will not prep a tooth from scratch - I'd be dangerous!'. But he adds 'I spend every waking hour typing on the computer when I'm not treating patients. Either I'm writing up new research for journals or carrying out my work

for Astra or *Dental Implant Summaries*. A lot of the research that I do that's published in peer-reviewed journals is my own work where I think to myself I need to prove and satisfy to myself that the Astra system is as good as - or better than - something else. Very often one comes up with questions in one's own mind - is this really the best way - or is there a better way? A classic example is looking at abutment joint design. My 1997 study that was published in *Clinical Oral Implants Research* is probably one of the most often-quoted studies used to prove that an internal conical joint is stronger than an external flat joint. It's a great source of pride to sit in a conference and see it being quoted left, right and

**Figure 9:** The Direct Abutment in situ /1



**Figure 8:** The working impression taken in Impregum with the plastic impression coping in situ

centre. That's a study that was born out of my own initiative, carried out in an independent research institute.'

Michael's amazing knowledge of the literature is explained by his work for *Dental Implant Summaries* - the official journal of the Association of Dental Implantology UK (ADI). Mark Atkinson founded the journal in the early 1990s and is co-editor with Michael who became involved around 1995. 'We cover approximately 40 international dental journals, scanning the contents and looking for relevant articles. Much of the implant literature is of a low scientific standard so we try and sift out the best stuff - which sometimes isn't easy to find! Mark and I share the work out as equally as possible but it's hard work, and when you get to the end of a journal you'd be quite happy never to do another summary for the rest of your

life. Then you have a month off and it all starts again. It's exhausting, but it's also a great source of pride because constantly people come up to us and tell us how great they think the product is.'

I ask Michael if he's obsessed with implants, to which he replies emphatically 'No.' But after a brief pause he adds - 'Well, of course the real answer is yes - it's my life.'

Michael's practice can be contacted on 0207 4869229, while AstraTech can be contacted on 01453 791001, or visit [www.astratech.com](http://www.astratech.com)

Next month Simon visits Cermal Ucer to talk about the ITI Dental Implant System manufactured by Straumann

**Figure 10:** Temporary crown has been fabricated in the surgery

