Another robot deal for J&J shows up lack of Verb results

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Johnson & Johnson is going in hard on robotics, but its first big move here has still not paid off.

In the four years since the formation of Verb Surgical, its joint-venture with Verily Life Sciences, Johnson & Johnson has done several more deals in the area of surgical robotics. The latest is an alliance with the Chinese group Tinavi, under which the two companies will co-promote Tinavi’s robotic arm for spine and trauma procedures in China.

Together with the $3.4bn acquisition of Auris Health – which began to bear the first fruit this month in the shape of early clinical data – and a couple of smaller deals, J&J’s commitment to this sector is beyond doubt. But little has been heard from Verb over the years, and it is perhaps curious that J&J’s longest-standing collaboration seems to have been the least productive.

The system developed by Beijing Tinavi Medical Technologies is called the TiRobot. It incorporates 3D imaging and optical navigation, meaning it can use a 3D scan of the patient’s torso to plan the exact location of the surgery, drill holes and insert screws. It was in a phase III trial in spinal fusion procedures in 2016 and the third-generation form of the machine was approved in China the same year.

J&J will now work with Tinavi to co-market and distribute TiRobot in China, and has also signed up to an R&D agreement, details of which are scant, but the plan seems to be to use the device to help place orthopaedic implants.

TiRobot is the only arm-based robotic technology with multiple indications approved for use in spine and trauma in China, J&J said. But it is far from the only surgical robot: Intuitive Surgical has a sizeable presence in China. The group does not break out Chinese sales specifically, but during the third quarter of 2019 Intuitive shipped 43 of its da Vinci robots to Asia.

Specialised vs generalised

But Tinavi’s tech is designed for very different applications to Intuitive’s. Indeed, few of the robotic surgery technologies J&J has pursued can be considered potential da Vinci competitors.

Auris Health’s Monarch system is lung-focused – like da Vinci, it is used to operate on soft tissue, but it does not have the range of applications Intuitive’s machines have. Data from the first human trial, a 55-subject
study called Benefit, came out last week, and suggested that the device can feasibly be used to help diagnose peripheral pulmonary lesions. Monarch already has FDA clearance, despite its previous trials having been conducted in cadavers.

<table>
<thead>
<tr>
<th>Deal date</th>
<th>Company</th>
<th>Technology</th>
<th>Deal details ($)</th>
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<tbody>
<tr>
<td>Dec 10, 2015</td>
<td>Verb Surgical</td>
<td>Robotics platform for a range of surgical procedures including soft tissue</td>
<td>J&amp;J formed joint-venture with Verily Life Sciences</td>
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<tr>
<td>Feb 20, 2018</td>
<td>Orthotaxy</td>
<td>Robotic-assisted surgery technology for total and partial knee replacement</td>
<td>Acquired by J&amp;J for undisclosed sum</td>
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<tr>
<td>Apr 1, 2019</td>
<td>Auris Health</td>
<td>Robotic technologies initially focused on bronchoscopic diagnostic and therapeutic procedures for lung cancer</td>
<td>Acquired by J&amp;J for $3.4bn upfront</td>
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<tr>
<td>Apr 8, 2019</td>
<td>Histosonics</td>
<td>Non-invasive robotics platform using focused sound energy to destroy targeted tissues</td>
<td>J&amp;J participated in $54m series C round</td>
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<tr>
<td>Oct 25, 2019</td>
<td>Tinavi</td>
<td>Robotic arm for spine and trauma surgery</td>
<td>Companies signed a co-marketing, distribution and R&amp;D agreement</td>
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Orthotaxy, which J&J bought in early 2018, makes a device used in knee surgeries. This deal could begin to pay off in a year or so: a regulatory submission is expected in mid-2020. After that, J&J plans to broaden Orthotaxy’s application into other orthopaedic procedures.

The company’s second foray into robotics this year was an arm’s-length deal. J&J took part in the $54m series C round in Michigan-based Histosonics, which makes a robotic device that uses focused sonic energy to perform histotripsy – the destruction of cells – killing targeted tissues while sparing healthy structures. A 10-patient trial looking at the ablation of primary and metastatic liver tumours concluded this year, though data have not yet been released.

Intriguingly, other investors in Histosonics’ fundraising included the radio- and proton therapy specialist Varian Medical Systems as well as Frederic Moll, the founder of Intuitive Surgical and Auris. Dr Moll is now chief development officer of J&J’s medical devices unit.

If J&J’s more focused robotic surgery efforts are creeping forward, Verb appears to be stuck in neutral. J&J has successfully conducted procedures across general surgery, bariatrics, gynaecology and thoracic surgery, suggesting that the Verb system has the potential for broad applicability, theoretically meaning it could be a competitor to Intuitive’s da Vinci.

But in a note from July analysts from Stifel wrote that development “appears to be delayed as the company evaluates the platform”. J&J has held discussions with regulatory bodies in the US and Europe regarding the technology, but no concrete timelines for filing, approval or launch have been outlined.

Even the R&D activities with Verb’s technology are largely a mystery; clinicaltrials.gov has no listings for the group and Verb itself has certainly made no announcements. Investors must have hoped for more than this. The sooner Verb reports progress the better.