Amolab, spin-off of the National Research Council in Lecce (Italy), is a research-based and high-tech company specialized in the development, design and production of innovative ultrasonic medical devices for non-invasive monitoring of childbirth labor progression and corresponding diagnostic support to gynecologists and midwives. Amolab offers clinicians an objective tool to assess fetal well-being during labor, overcoming the limitations of the current technologies in the obstetrics and gynecology field. Amolab’s mission is to provide the medical community with the first solution for a quantitative, automatic and non-invasive monitoring of labor progression.

Fetal progress in the birth canal may be now automatically assessed and objectively quantified, avoiding operator dependence thus drastically decreasing human error. Midwives and gynecologists will be finally supported by an effective, innovative, and user-friendly medical device.

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Amolab’s mission is to provide the medical community with the first technological solution for a safe, automatic and non-invasive monitoring of labor.

Amolab offers clinicians an objective and reliable tool to assess fetal well-being from intrauterine to extrauterine life.

Amolab’s vision is to put the science at the service of society for the development of innovative and non-invasive medical technologies aimed at improving the quality of life. This will also contribute to healthcare system efficiency and sustainability.

Amolab’s aim is to become a leading company in the field of technological innovation applied to the medical sector. This will be achieved by exploiting advanced biomedical engineering knowledge and skills for research and development of innovative solutions to make childbirth monitoring safer and more accurate, in order to meet the needs of both clinicians and patients.
The new QUS device for a safer childbirth

SensUS is the only solution in the world allowing an objective and real-time monitoring of labor progression, easily and effectively supporting the medical staff in the identification of all the cases in which a medical intervention is required. SensUS allows a safe, and user-friendly monitoring of the entire childbirth labor, from the beginning until the delivery, through simple and non-invasive (trans-labial) ultrasound (US) scans. Acquired US images and echographic images are automatically processed to measure fetal progression parameters, displaying them through both via highly intuitive 3D reconstructions and synthetic graphs of clinically relevant indicators.

In a few seconds it is now possible to safely and reliably assess the fetal progress in the birth canal. SensUS is the only solution in the world allowing an objective and real-time US objective monitoring of labor progression, easily and effectively supporting the medical staff in the identification of all the cases in which a medical intervention is required. SensUS is the only solution in the world allowing an objective and real-time US objective monitoring of labor progression, easily and effectively supporting the medical staff in the identification of all the cases in which a medical intervention is required.

The implemented algorithms are the most advanced synthesis of ultrasonic technologies available in medicine and allow simple and continuous monitoring of the childbirth providing quantitative and accurate measurements of the most important indicators of fetal progression. The monitoring takes place in real-time and accompanies mother and baby in each moment of the passage from intrauterine to extrauterine life.

Forensics medicine will also widely benefit from such an innovative system, thanks to the possibility of objectively documenting each labor management decision taken by the clinicians.

Amolab’s technology will effectively support midwives and gynecologists in the monitoring of labor progression, making the procedure non-invasive, accurate and completely automatic, avoiding the operator-dependence and thus drastically decreasing the possibility of human errors.

SensUS, International patented technology for an user-friendly and automatic monitoring of labor progression.

Status Quo

Nowadays midwives and gynecologists have no advanced technological support for childbirth labor monitoring: the current routinely adopted method is still represented by highly invasive and painful manual inspections of the birth canal. Therefore, labor management decisions (natural childbirth, instrumental delivery or caesarean section) are taken on the basis of qualitative and subjective information. However, there is an extensive literature-reported evidence that manual examinations do not provide reliable assessments of labor progress, since they are typically affected by high error rates (up to 88% of the cases, even in presence of experienced operators). This results in rate of caesarian section deliveries up 3 times the World Health Organization (WHO) recommendations, unjustified risks for mothers and babies, and unsustainable costs for healthcare systems (mainly due to legal litigations for possible clinician errors in the management of childbirth labors that caused permanent disabilities and/or death).

In this scenario, it is imperative the need to quickly enter the market and the clinical practice with a disruptive and innovative technological solution capable of automatically and safely monitoring the actual labor progression, representing a valid decisional support for gynecologists and midwives.

Forensics medicine will also widely benefit from such an innovative system, thanks to the possibility of objectively documenting each labor management decision taken by the clinicians.

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We push things forward

Amolab brought on the market the first technological solution for safe, automatic and quantitative monitoring of labor progression. The main objective is to improve safety for both mother and baby by providing an effective support to clinicians in order to improve the quality of medical care.

SensUS is the only device in the world that allows an objective assessment of labor progression, avoiding the dependence on operator experience and thus drastically decreasing the possibility of human errors. SensUS is based on a patented technology (Patent of the National Research Council n. EP2375980), unique in the world, which integrates hardware and software quantitative ultrasound (QUS) approaches into an advanced device, able to overcome the limitations of traditional US investigations, essentially due to their high operator-dependence and operator-dependence.

High accuracy: Clinical validation studies demonstrated the feasibility and the very high accuracy of the proposed technology. SensUS allows an objective quantification of labor progression in real time with a high level of accuracy compared to the gold standard reference represented by the manual image segmentation performed by an experienced operator. This technology resulted to be well tolerated by the patients, completely non-invasive, and more accurate than routinely adopted manual inspections of the birth canal.

SensUS offers a valid decisional support for gynecologists and midwives.

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