

Vision 2050

“Every success story is a tale of constant adaption, revision and change” quotes Richard Branson. In similar way, the anaesthetic practice in 2050 will reach its glorifying summit by constant adoption and change in its certain aspects. The advancement of science and technology brings varied thoughts in people blooming from different corners of the world. Some view it as a fire that cooks us plenty and others view it as a fire that burns and leaves us empty. But in my opinion, I say **“Be near science and technology and you will never fail”**.

Anaesthesia in 2050 will be a field where it is computer-driven, robot-executed and human controlled. The development of anaesthesia from “MORTON ANAESTHESIA” will soon witness its peak as the most technologically advanced and target oriented job which always ensures patient safety. When the high technology forms an integral part of anaesthetic practice, it will bring **zero incidence** in anaesthesia related fatalities.

NANO-ANAESTHESIA AND ITS ROBOTIC ROLE! ICU RUN BY ROBOTS

By 2050, with early morning greetings from the robots, anaesthesia practice begins. The introduction of robots in anaesthesia practice will decrease the incidence of airway trauma, pressor & stress response and other human related airway complication. “I don’t have stress anymore to cause stress response”. The ability to monitor patient’s ongoing brain activity and drug distribution is increasing day by day. It is of very much burden to human’s cortex to decipher all complex mathematical monitoring system and thereby ending up with mis-interpretation that leads to over-dosing or under-dosing of drugs. With the introduction of micro-robots, they perform specific task which is target pointed that is free from any adverse effects and also they will carry out the required action through modelling and modulation of desired receptors.

“ZIP HIM WITH A CHIP OR ASK HIM TO SIP A CHIP”

The introduction of nanotechnology in our practice is blooming like ice-bergs in ocean, but eventually in 2050, I strongly believe it is a chip based nanotechnology which when inserted into the patient, analyses the pharmacokinetics, pharmacodynamics and decides the correct choice and dose of drug suitable for the patient. It show cases itself because it has no adverse effects, can be applied to any sort anaesthesia, no peaks and troughs in its effects and very importantly it is a non –biological entity which is specific and target oriented.

“Any sufficiently advanced technology is equivalent to magic” quotes Arthur. C. Clark signifying that if we introduce nanorobots of Robert A Freitar surely magic things could be expected in anaesthesia 2050.

MOBILE TURNING NOBLE!

Smart phones are the most popular device on this planet. Eventually I dream in 2050, the pre- anaesthetic check up is smartly done through smart phones by smart anaesthesiologist. It is through micro USB drive, 6th sense technology and Wi-Fi compatible anaesthesia machine. Smart phones assess the patient and plan a specific anaesthesia for a patient by integrating all his clinical symptoms, thousands of risk indices, co-morbidities and hemodynamic variables. The complete pre evaluation check-up is done by a single click in smart phones.

SPEAKING ANAESTHESIA MACHINE WHICH IS ALSO FOLDABLE!

How nice it would be if our anaesthesia machine talks to us, eg: *Hey its nitrous oxide. Hey i am not getting pipeline o2. Hey i am having resistance to push fresh gas flow* etc.

All these computer integrated, built in voice makes the anaesthesia profession easier and also results in very poor margin of errors. The speaking anaesthesia machine enables our practice to run smoothly without any tension and makes our job easier. Also, it would be nice to hear that my automated anaesthesia machine is foldable and can be taken to remote places and convert rural rooms to royal rooms.

TELL VIA TELE ANAESTHESIA!

This anaesthesia will offer us the possibility of distant preoperative assessment of patient and aid of trained personnel to perform anaesthesia tasks. Distant and far locations are no more a worry by incorporating tele-anaesthesia.

INTELLIGENCE THAT IS ARTIFICIAL BUT BENEFICIAL!

Artificial intelligence and augmented reality finds various applications in multiple tasks of anaesthetist and also serves as an important guide for anaesthesiologist. This type of machine will be adapted and incorporated across various hospitals. We would have a machine that detects hypotension 15 minutes even before it is evident clinically. This is possible with machine learning algorithms which uses arterial waveforms and analyse. The use of clottocytes and artificial platelets in 2050 will make transfusion medicine advanced.

ROAM WITH GENOME!

Genomic anaesthesia modulates genome of an individual even when the fetus is in-utero. The genomic influences on the distribution & dynamics of drugs will be known and deliver exact dose of anaesthesia. The tolerability, susceptibility, anaphylaxis of drug can be known by genomic mapping of an individual. It would be so nice if a chip is inserted on to patient's finger and it will evaluate entire genomics of an individual.

YOU LOOK AT THE SHADE, THEN ASK SURGEON TO LIFT HIS BLADE!

The application of nano technology in local anaesthesia is also attractive. How nice it would be if the anaesthetised anatomic dermatomes gets coloured and separate themselves from areas that is not anaesthetised?????. By getting coloured we can easily assess the dermatomes that are spared and can easily determine the need of additional adjuvants like sedatives and hypnotics.

"ALL OR NONE LAW"

I would imagine a drug beyond hyptiva, duzitol, remimizolam which would satisfy all components of ideal anaesthetic and single drug that fulfills all the criteria of general anaesthesia.

I CAN LESSEN THE ATTAINED HEIGHT!

By 2050, there would be a drug which can decrease the level of height attained by the action of hyperbaric bupivacaine. Therefore, there is no occurrence of high or total spinal.

With all these technology, I also hope that, by 2050, there will be increased awareness about the practice of anaesthesiology among people and also inclusion of anaesthesiology subject with marks greater than 50 in undergraduate exams.

Present.....

*There comes a patient for surgical excision,
And I take very long time for my decision.
Hours I take to speak and evaluate,
Making surgeon's mind to ablate.*

*With tension, I hold edematous hand,
And for a vein, I tie a tourniquet band.
In difficulty I insert a TV cannula,
Then in relief I retract my scapula.*

*Connecting the drip set and catheter,
Checking anaesthesia machine with canister
I start to administer fluids and drugs
With questions crawling in mind as bugs*

*During the hours of surgery the patient bucks
And the surgeon's head, turns with angry look.
Hey!!!He is out of relaxant phase.
Shouts surgeon with his red face.*

*In hurry I give relaxant in excess,
Cursing later that it doesn't regress.
Needs a mind like computer,
To analyse and encounter.*

*Surgery gets completed at last
I trying to recover patient fast
"Is it all ok?" asks surgeon who is certain,
"I need ventilator", echoes behind curtain.*

Future.....

*There comes a patient for surgical excision,
And my robot quickly evaluates with vision.
Immediately on OT table, patient is shifted
Making surgeon feel that he is gifted.*

*I come to OT with a vein finder,
Quickly inserts it like a real founder.
Robot connects various monitors and cable,
And I operating it with my luxurious table.*

*Drug chip inserted on patient's head,
Analyses dynamics of patient on bed.
Every info displays about patient condition,
And getting ready to start our mission.*

*Robot administer drugs based on its style,
I just watch and control it, with a smile.
No under-dosing or over-dosing happen,
And the surgeon is happy with our fashion.*

*Every nano second of brain's activity,
Ensures patient's well-being and safety.
Feels proud to sit and administer,
the anaesthesia care like a prime minister*

*During the last suture knot which is final,
Patient happily opens eyes with no denial.
Surgeon exclaims at me "thanks a ton"
And I say to my robot "We have won".*

By

2050, even though machine, robots, technology does all work .I take the credit saying that all these marvellous technology is controlled by me. Machines can never replace me.

To conclude, by 2050, I wish to wear spectacles that colours all veins/arteries/nerves of body and my faithful robot standing besides me who is waiting for my commands and most important is I imagine a **HUMBLE SURGEON** who accepts me and my robot. Technology in 2050 will redefine the delivery of care.

Let the thrust in us and trust on science make **vision 2050 a marvellous 2050.**