THE SCAR – AM I "IMMUNOGENIC" OR "ULCEROGENIC"??

Dr Narayana Holla, Professor, Department of Community Medicine, KVG Medical College, Sullia: 13-06-2018

Control of TB is a question of justice and human rights. Globally, out of all infectious diseases, after HIV/AIDS, TB is the second biggest killer [26% and is preventable]. TB kills or debilitates more adults aged between 15 and 59 years than any other disease in the world.

Successful TB control in the long term can be achieved only by the combined efforts of
1. Administration of **BCG vaccination** to infants, preferably at birth, to prevent both primary infection and secondary reactivation of latent infection.
2. Early **case** detection, directly observed treatment and contact tracing.

The BCG vaccine was first used to immunize humans in **1921**. It is one of the most widely used of all current vaccines, reaching >80% of neonates and infants in countries where it is part of the national childhood immunization programme.
Dr Robin Basu Roy said: "We found that BCG does prevent TB infection, which has been underappreciated until now…..; it has a bigger role than previously thought in protecting children for up to 20 years, especially when given to neonates, in addition to 70-80% effectiveness against the most severe forms of TB, such as miliary TB and tuberculous meningitis in children.

Present practice: In the public sector, at birth, zero OPV 2 drops orally [noninvasive hence painless], BCG 0.05mL intradermally [ID] to the left upper arm [less painful] and 0.5mL Hepatitis B monovalent vaccine, intra muscularly [IM] more painful are administered in that order in the labor room during the observation period before shifting to the post natal ward.

There is no uniform protocol in the private sector including pioneer medical colleges: some are administering only zero OPV, administration of BCG and HepB are denied, ignoring National Immunization Schedule. >70% births are occurring in the private sector. Those who administer BCG are not following WHO/GOI standard as a result following vaccination, there may not be a scar, or the scar is "ulcerogenic" rather than "Immunogenc".

Normal BCG Reaction: In the **uninfected** individuals the reaction starts about 2-4 weeks after vaccination and all the **6 stages** from erythema, nodule, pustule, ulcer, crust and a characteristic **raised scar** formation are over in 4-6 weeks period in that sequence at the site of BCG vaccination. BCG vaccine has live attenuated and some dead TB bacilli also in addition to other excipients. Nodular raised scar **>2mm** is mainly attributable to "**immunogenic" granulomatus reaction** to the live attenuated bacilli. Presence of scar which is soft and depressed is like any **"ulcerogenic"** scar, one of the reasons being administration of **nonpotent** vaccine / VVM free vaccine / wrong diluent / other programmatic errors like reconstituting with diluent at room temperature [thermal shock: dormant bacilli below 8^0C in powder, suddenly facing the tsunami at higher temperature], not maintaining critical temperature recommended, using reconstituted vaccine for more than 6 hrs, high risk community practices like applying antiseptics / any other area specific application.

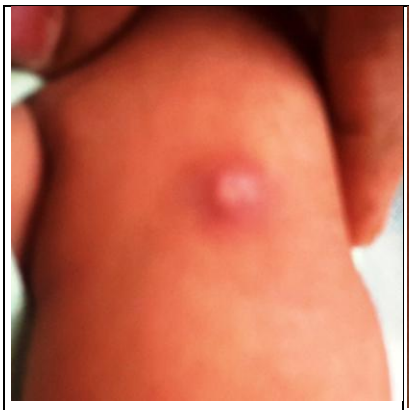
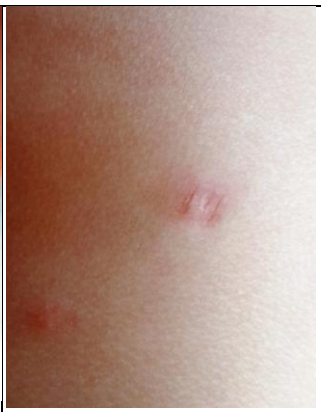
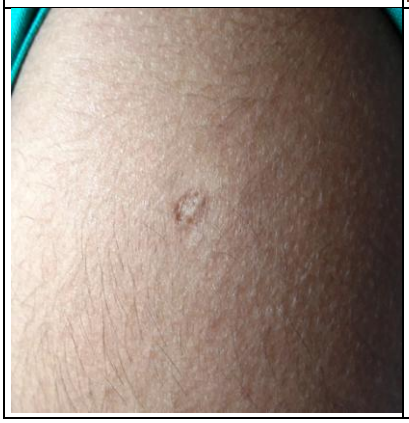
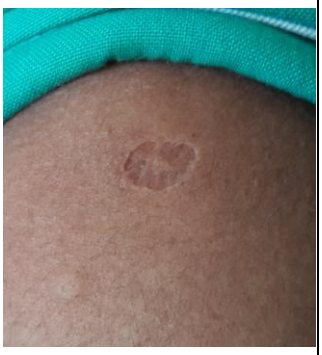
After literature review, we started observing BCG scar. We found **>2mm,** raised nodular immunogenic scar mainly in children who were vaccinated as per standard and "ulcerogenic" soft depressed scar manly among the children of elite family vaccinated by private sector. Programmatic errors are occurring, more so in the private sector both due to gap in the RI operational knowledge and being deprived of supportive supervision by the authorized RI monitors.

Lesson / concern: This could be one of the major reasons lowering the vaccine efficiency as ~40% children in the urban area are vaccinated by the private sector; >70% deliveries being in private sector in coastal districts, receive BCG in private birthing facilities. This can result in accumulation of susceptible among the vaccinated and occurrences of VPDs among the vaccinated as revealed by any outbreak investigations of a VPD like measles / diphtheria.

Paradoxically, many such children are those of doctors and nurses who opt services from private sector.

Solution: Simple: Continued education / orientation / reorientation blended with extended supportive supervision by the authorized RI monitors on a regular basis.

Before winding up: Please & kindly check the BCG scar of yourself / your children / grand children. We eagerly welcome your most valuable constructive comments / suggestions for making positive changes to promote child health.

		>2mm raised nodular scars
		Soft scar & shallow, looking like that of smallpox – but these are followed by BCG vaccination